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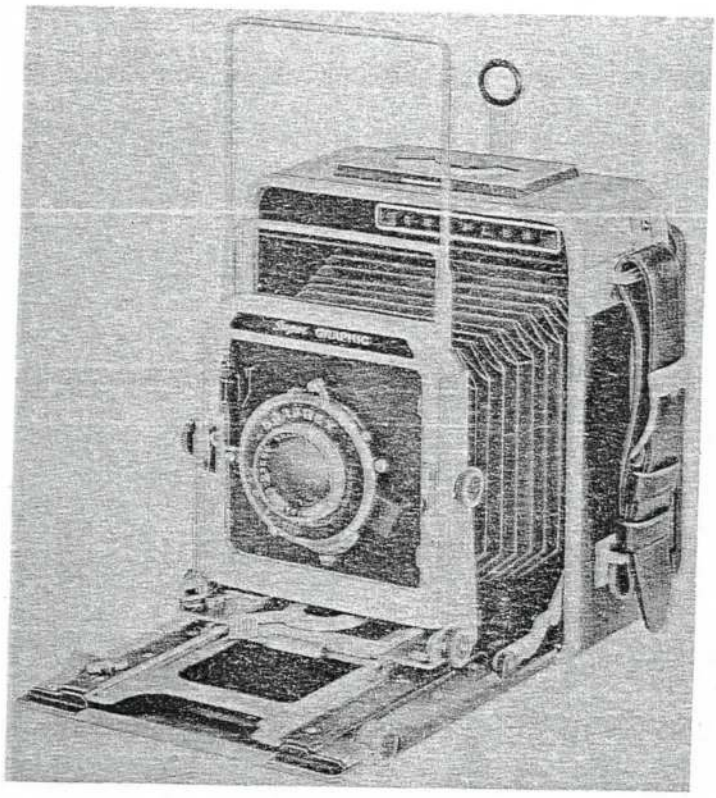

SUPER - GRAPHIC

SERIAL NUMBERS UP TO 646124

GRAFLEX® | A GENERAL PRECISION COMPANY

A SUBSIDIARY OF GENERAL PRECISION EQUIPMENT CORPORATION

193-759

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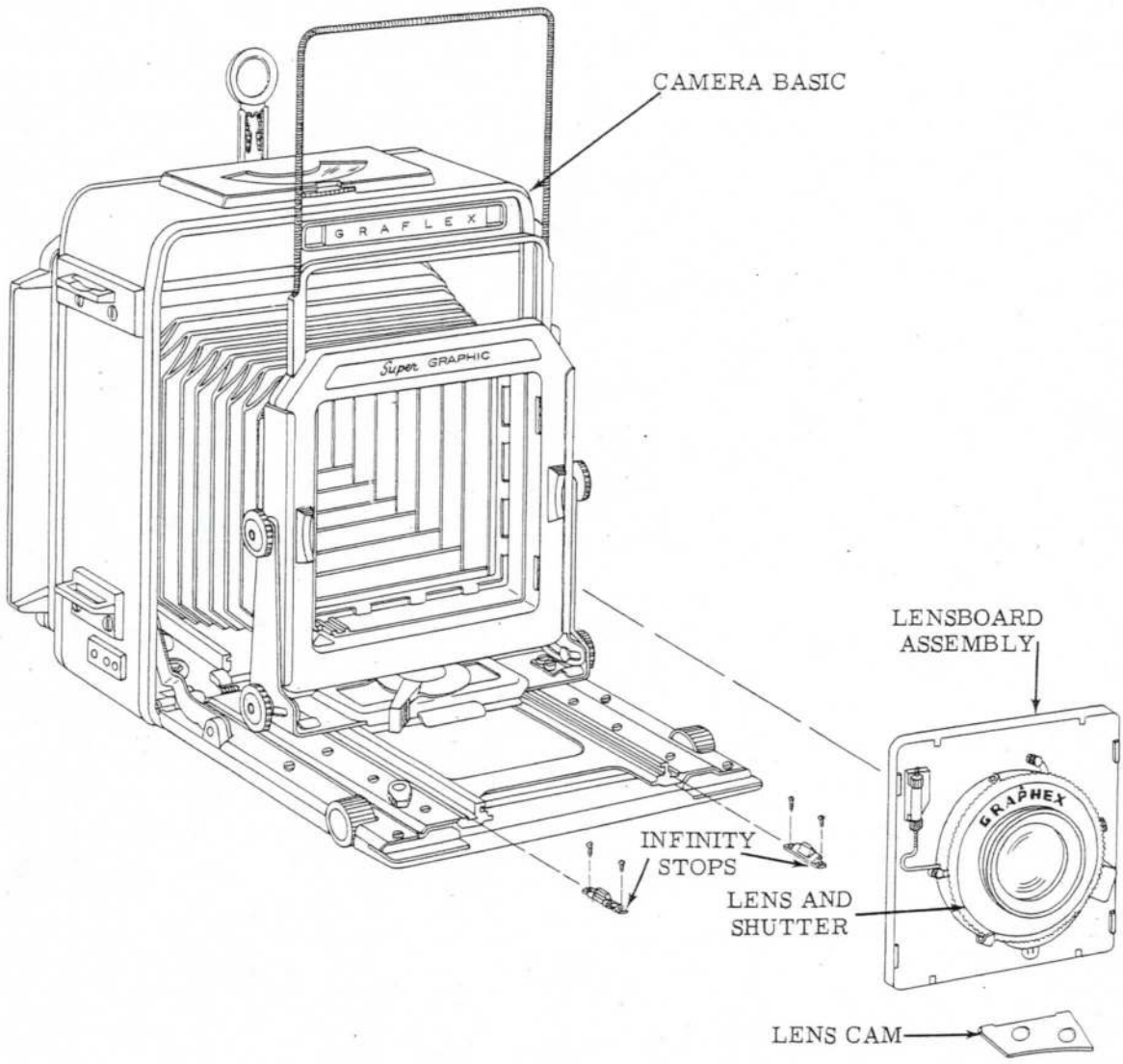

Figure 1. CAMERA COMPLETE

INTRODUCTION - This section of the Graflex Service Parts Manual covers the Service Instruction and Parts Catalog for the Super Graphic Cameras bearing serial numbers up to 646124.

Part I

A. CAMERA COMPLETE - (figure 1)

The camera complete consists of camera basic, lens and shutter mounted in a Super Graphic Lensboard Assembly, matching lens cams and a set of infinity stops to match the focal length of the lens.

The lens cam is selected after the lens has been optically measured for actual focal length (lens travel).

B. OPTICAL MEASUREMENT OF LENS TRAVEL

Optical measurements are best determined through the use of a collimator with an accurate measuring device. Lens is set up and focused on theoretical infinity and the measuring device set for 0. Lens movement is measured (to nearest .001 of an inch) from infinity to the following near distance:

Lens Focal Length	Near Distance (target to film plane)
3 to 7 inch	4 feet
7 to 15 inch	10 feet

At least three different readings should be taken and recorded to insure that a satisfactory figure has been obtained. If equipment is not available, send lens and shutter to nearest Graflex Service Department (see page 43) for collimation and selection of cam.

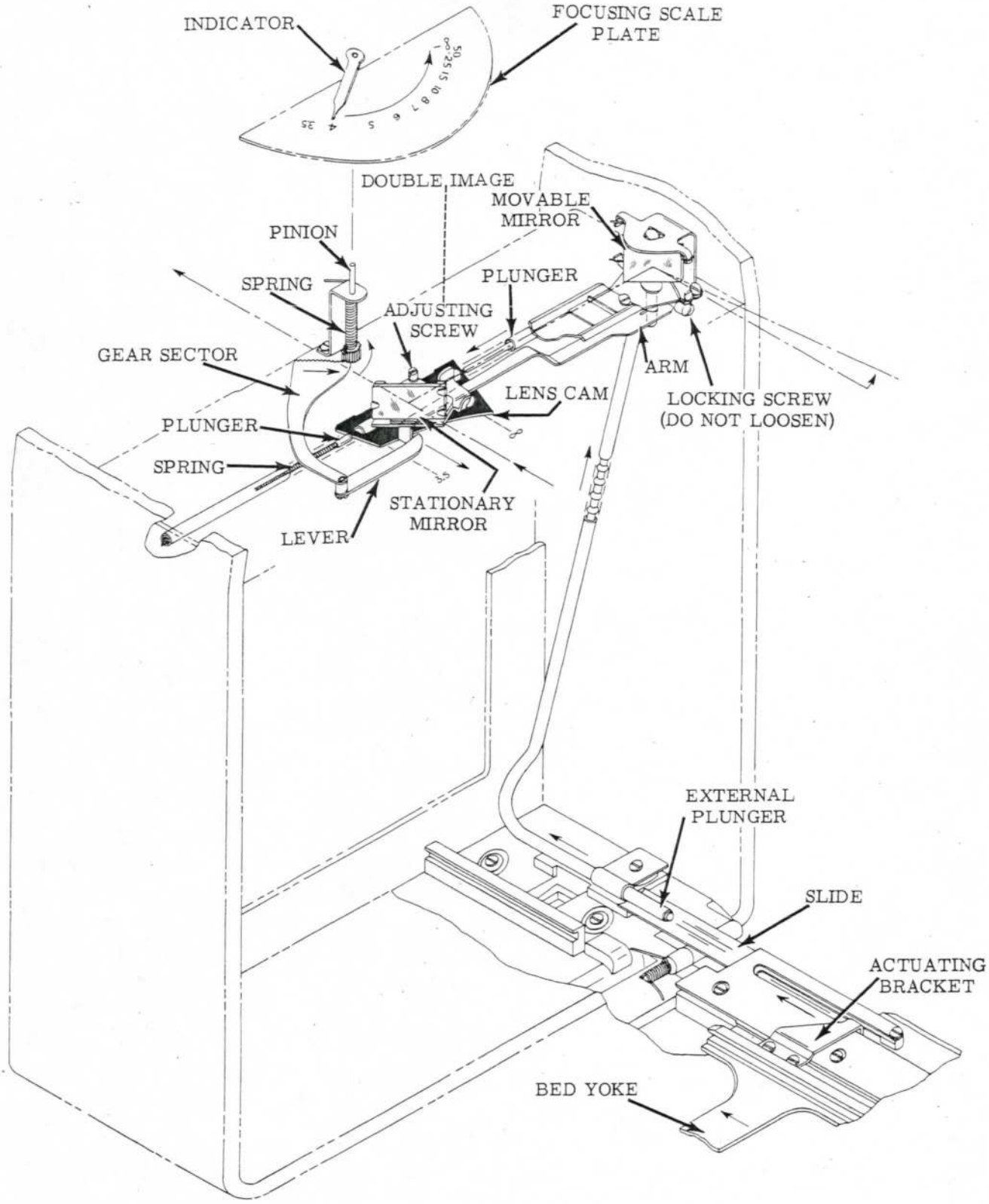

Figure 2. RANGEFINDER OPERATION

Part II

A. SUPER GRAPHIC RANGEFINDER

The Super Graphic Rangefinder is mounted in a drawer type housing, located under the top of the camera. Once the rangefinder is assembled to the camera and adjusted, it can be used with a wide variety of lenses through the use of lens cams. Lenses may vary in focal length from wide angle through telephoto.

B. OPERATION - (figure 2)

To adjust the Super Graphic rangefinder, it is important to understand its operation. A bracket on the left side of the bed yoke engages a slide. The slide is assembled to a pin located on the underside of an external plunger. The slide and plunger are part of the rangefinder tube assembly. The external plunger transmits its motion through a column of balls and spacers inside the rangefinder tube to an internal plunger that pushes the lens cam to the right. The lens cam presses against a spring loaded plunger supplying force to return the lens cam to its original position when the yoke is moved outward.

The yoke is moved in or out for focusing. The rangefinder arm rides on the lens cam; motion of the arm, caused by the cam, is transmitted to the movable mirror shaft. The rangefinder lever also rides against the formed end of the rangefinder arm transmitting its motion to a gear sector which meshes with a pinion. This linkage is spring loaded against the formed end on the rangefinder arm by a coil spring wound to this pinion shaft. The shaft of the pinion protrudes through the top of the camera. An indicator is pressed on to the pinion shaft when rangefinder infinity has been established.

The image reflected off the movable mirror can be brought to coincide with the image seen through the stationary semi-transparent mirror by rotating the movable mirror. When these two images are in coincidence at the same time that the object image seen through the lens is in sharp focus on the ground glass, the rangefinder and camera lens are in complete synchronization.

C. RANGEFINDER INFINITY

Rangefinder infinity is determined through the use of a collimator and using theoretical infinity. Special optical equipment and gages are required for locating and alignment of movable mirror. When these adjustments have been accomplished, the locking screw on the rangefinder arm is tightened to maintain this fixed infinity setting. This locking screw should not be loosened. See paragraph H for rangefinders requiring fixed infinity setting.

D. DOUBLE IMAGE ADJUSTMENT

1. Remove battery cover and batteries.
2. Remove clip and locate the lock spring on roof of battery compartment and swing toward rear of camera. This will release the focusing scale cover assembly.
3. Remove the exposure guide and exposure guide spring. When performing this operation be careful not to bend or twist the focusing scale indicator on the pinion shaft, otherwise it will be necessary to replace the indicator.
4. Remove the lens cam, this in turn will allow the focusing scale indicator to swing clear of the focusing scale plate.
5. Replace the lens cam in slot in rangefinder tube.
6. With a screwdriver, locate slot in adjusting screw (located under hole) in uncovered portion of the camera body. To raise image turn adjusting screw counter clockwise. To lower image turn adjusting screw clockwise.

E. ACTUATING BRACKET ADJUSTMENT

Whenever the rangefinder housing has been removed from the camera or the actuating bracket is being replaced or repositioned, the following procedure should be followed:

1. Insert lens cam in cam slot in rangefinder tube assembly and move the yoke inward and outward several times to make sure lens cam is in position and functions properly.
2. Focus rangefinder on infinity target over 5000 ft. and rack the bed yoke inward until it is within 0.040 ± .010 inch from the yoke stop and lock bed yoke in this position.

Note: It is important that 0.040 ± .010 dimension be maintained in order that all focusing may be accomplished with a forward movement of the bed yoke.

Slide the actuating bracket on the bed yoke until the formed down portion of actuating bracket engages the slide. Focus rangefinder on infinity target and simultaneously move actuating bracket on bed yoke until rangefinder focus is in coincidence with the infinity target. Secure actuating bracket in this position using two screws. If rangefinder housing has been removed, press new indicator in position on pinion shaft so that indicator will point to infinity (∞) location on focusing scale plate. Apply small amount of M 373 Bond Master adhesive in cup portion of indicator to give added support.

3. Assemble the front standard complete, if removed, and repeat lens and rangefinder synchronization paragraph F below.

F. RANGEFINDER AND LENS SYNCHRONIZATION

Use lensboard assembly (with lens) and lens cam which were originally fitted to the camera and proceed as follows:

1. Rack bed yoke outward and install lens cam in cam slot in rangefinder tube. Rack bed yoke inward and outward several times, making sure that cam is in position and functions properly.
2. Focus rangefinder on infinity target over 5000 ft. and check rangefinder infinity focus and lock bed yoke in this position. The indicator on top of camera should point to infinity (∞) position on focusing scale plate. If necessary, make double image adjustment.
3. Position lensboard assembly (with lens) in front standard making sure lensboard is square in front frame and securely locked in place.
4. Pull front standard out to existing infinity stops and lock front standard in this position. Use a square to check squareness of front standard on bed yoke. Adjust if necessary.
5. Check ground glass focus of lens using same target as in 2 above. If rangefinder and lens focus coincide, unlock bed yoke and rack forward to near distance of the lens used, lock front standard in this position and recheck coincidence. If in coincidence, proper rangefinder and lens are in complete synchronization.

G. MULTIPLE LENS FITTING

Before additional lenses are fitted to the camera, it must be determined if original lensboard assembly (with lens) is in synchronization with the rangefinder.

1. Repeat rangefinder and lens synchronization 2F.
2. Rack bed yoke outward and remove original lens cam and lensboard assembly (with lens) and insert lens cam for new lens to be fitted. Rack the bed yoke inward and outward several times making sure that cam is in position and functioning properly.
3. Rack bed yoke inward to infinity position of the rangefinder and lock bed yoke in this position. The indicator will point to infinity (∞) position on focusing scale plate.
4. Position new lensboard assembly (with lens) in front standard making sure lensboard is square and securely locked in place.
5. Tip down infinity stops (original) to permit free movement of the front standard on the bed yoke.
6. Focus new lens on infinity target over 5000 ft. and move front standard so that lens focuses a sharp infinity target on ground glass and lock front standard in this position. Use a square to check the squareness of front standard on bed yoke. Assemble two additional infinity stops in position.
7. Check ground glass focus of lens using same target as in 6 above and rack forward to near distance of the lens used, lock front standard in this position and recheck coincidence. If in coincidence, proper rangefinder and new lens are in complete synchronization.

H. RANGEFINDER HOUSING EXCHANGE

Whenever the fixed infinity setting of the rangefinder needs to be established it is recommended that the rangefinder housing assembly be removed from the camera. Remove circuit plate and return the rangefinder housing to the nearest Graflex Service Department; whereby an alternate factory reconditioned rangefinder housing assembly and a new indicator will be returned (nominal charge) with rangefinder infinity and lever adjustment accomplished, ready for installation. See Part IV subparagraphs A. 1 thru A. 23 and K. 1 thru K. 2 for disassembly. p.15 ≷ p.20

J. RANGEFINDER TROUBLE SHOOTING CHART.

The following table of potential troubles, causes and remedies is supplied to expedite service of common difficulties.

NOTE: In any repair which involves the removal of the rangefinder housing from the camera or an adjustment to the rangefinder actuating bracket, refer to paragraph E above.

TROUBLE	CAUSE	REMEDY
Indicator does not locate on infinity (∞) position on focusing scale plate.	Indicator loose on pinion shaft.	Replace.
	Gear sector loose on its shaft.	Replace.
	Broken pinion spring, worn teeth on pinion or gear sector.	Replace.
With yoke racked all the way back rangefinder will not come into coincidence at infinity.	Actuating bracket has shifted forward or is bent.	Adjust or replace. (see paragraph E above).
Double image .	Stationary mirror out of height adjustment with movable mirror.	Adjust (see paragraph D above).
No superimposed image on stationary mirror.	Movable mirror broken, fallen off, or movable mirror shaft is out of position thus causing fixed infinity setting of rangefinder to be out of adjustment.	See paragraph H above.
Movable image travel is in diagonal direction instead of horizontal.	Springs supporting movable mirror shaft in position in V slot have become unhooked or broken.	Rehook or replace (providing movable mirror has not shifted and caused fixed infinity setting of rangefinder to be out of adjustment. see paragraph H above).

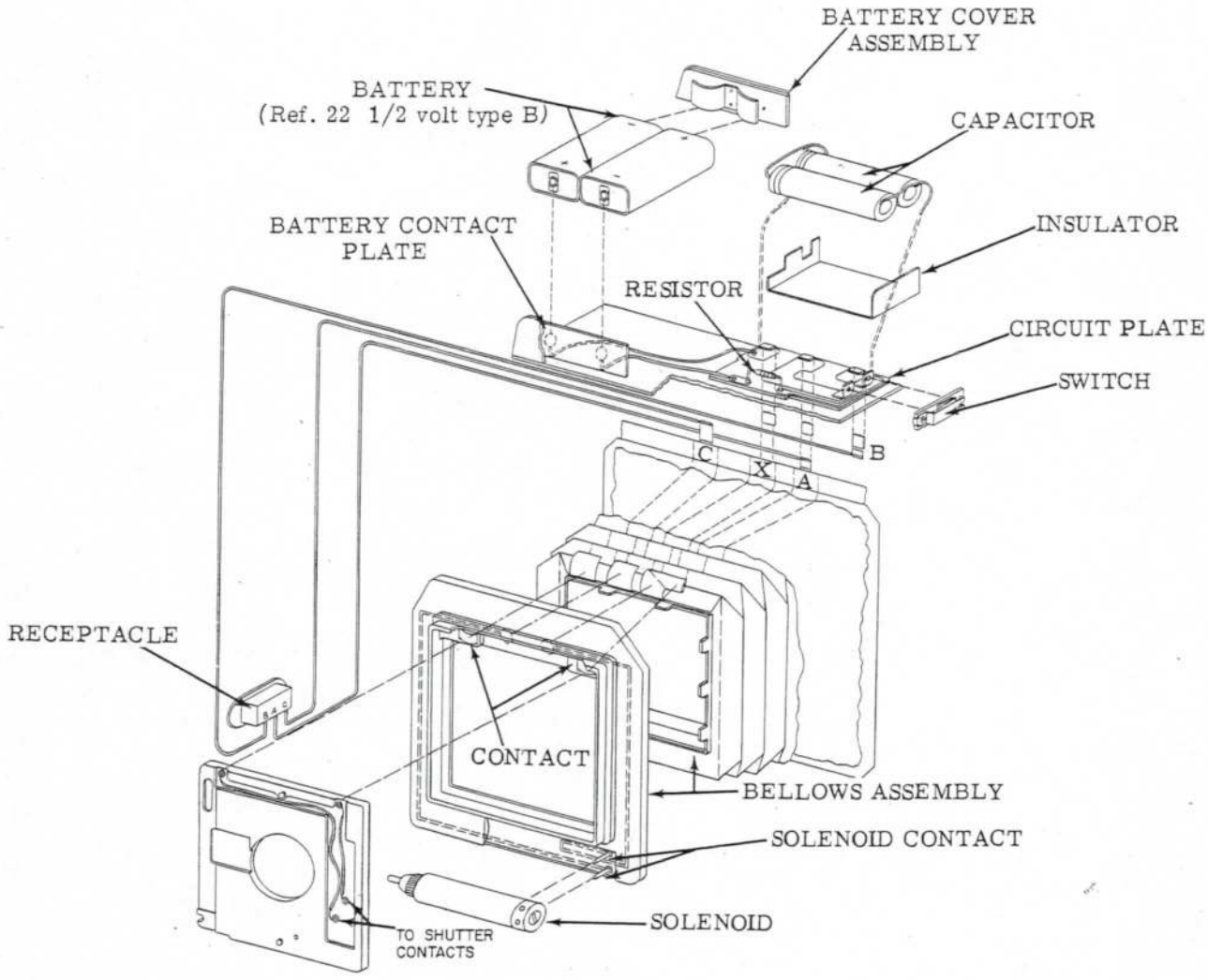

Figure 3. PICTORIAL WIRING DIAGRAM

Part III

A. SERVICE EQUIPMENT

1. Super Graphic Analyzer (figure 5) or a standard volt-ohm meter such as Simpson model 260 or equal may be used by personnel having an intimate knowledge of electrical performance characteristics

Note: Refer to paragraphs C, D and E and figures 6 thru 14 which will supply information for construction, function and calibration of the Super Graphic Analyzer (figure 5).

2. Miscellaneous tools such as soldering iron, pliers, screwdriver, etc.

3. For all soldered electrical connections, use a rosin flux core solder whose alloy is 50% tin, 50%lead, such as:

Kester #44	Kester Solder Co. Chicago, Ill.
Multicore solder Ersin Flux	Multicore Sales, Inc. New York 13, New York

CAUTION: Never use an acid core solder or acid flux on electrical equipment.

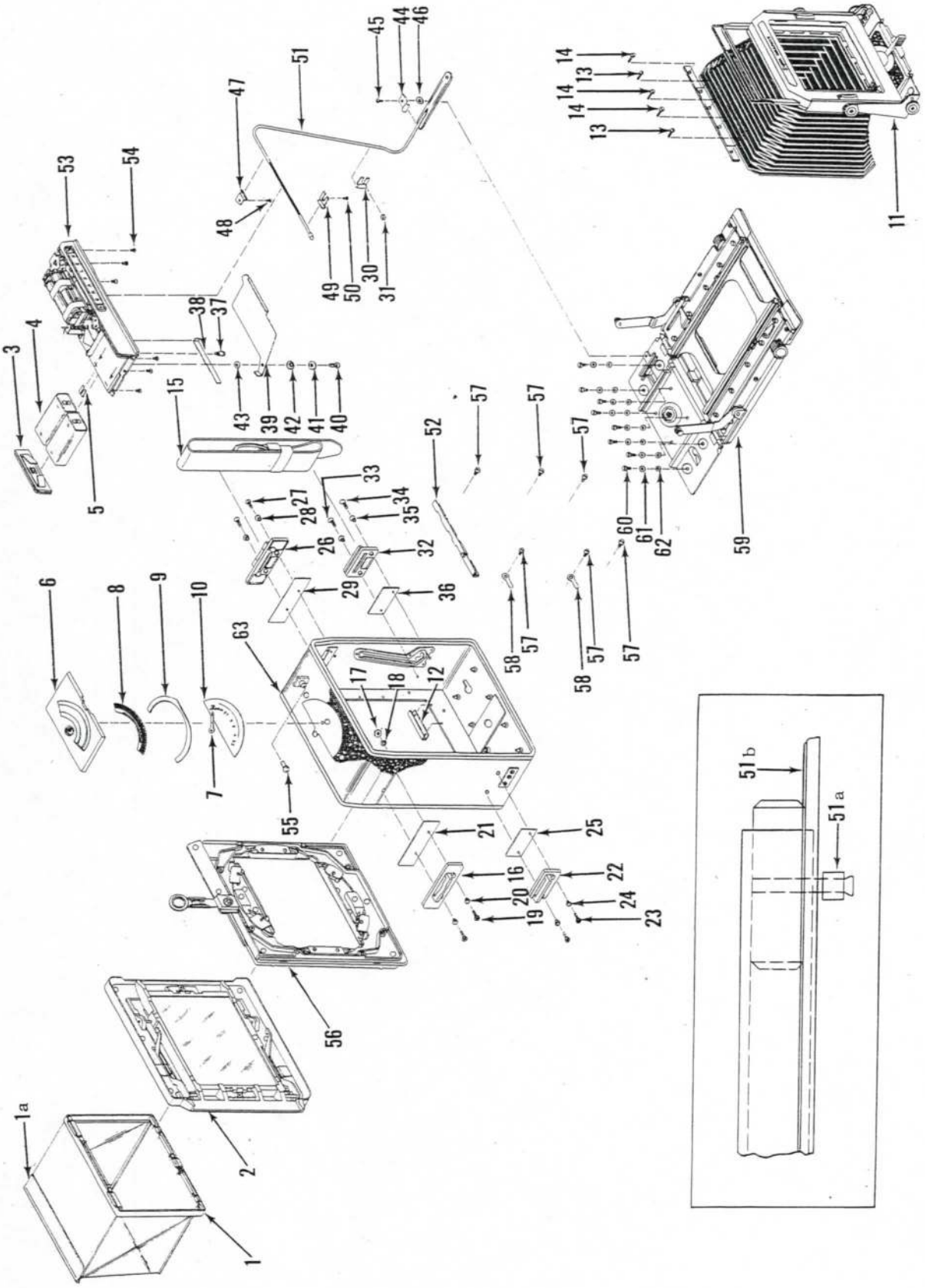

Figure 15. CAMERA BASIC

Part IV

A. CAMERA BASIC - DISASSEMBLY (figure 15)

1. Remove hood assembly (1) by pressing down on latch to open and pull outward on top or bottom panel. If necessary, remove the dark slide clip(1a) by inserting a small tool under front top corner and press outward.

NOTE: The hood assembly is assembled with staked pins and should not be disassembled. The hood should be replaced as a unit so that trouble free operation can be maintained.

2. Remove focusing frame (2) by simultaneously pressing downward on knurled finger pads of the upper and lower arms and sliding focusing frame assembly to the right. If further disassembly is necessary see figure 16.

3. Remove battery cover assembly (3) by pressing inward on left side of cover and slide slightly to the left.

4. Remove two batteries (4).

5. Remove clip (5) and release focusing scale cover lock located in upper part of battery compartment and remove focusing scale cover assembly (6). The focusing scale cover lock is riveted to camera body and is part of body complete.

6. Remove focusing scale indicator (7) by applying small amount of methyl ethyl ketone to loosen adhesive around pinion shaft. Using two screwdrivers to support focusing scale indicator, pry straight upward being careful not to bend pinion shaft.

NOTE: If focusing scale indicator has been removed, it cannot be used again.

7. Remove exposure guide (8), exposure guide spring (9) and focusing scale plate (10).

8. Remove front standard complete (11) by removing six bellows clips (12), two machine screws (13) and three special machine screws (14). Access to the machine screws can be better accomplished by sliding front standard from bed yoke. If further disassembly is necessary see figure 17.

9. Remove handle (15)

10. Remove upper right handle bracket (16) by removing two machine nuts (17), two lock washers (18), two machine screws (19), two insulating washers (20) and insulator (21).

11. Remove lower right handle bracket (22) by removing two machine screws (23), two insulating washers (24) and insulator (25).

12. Remove upper left handle bracket (26) by removing two machine screws (27), two insulating washers (28) and insulator (29).

13. Remove tube clamp (30) and machine nut (31).

14. Remove lower left handle bracket (32) by removing machine screw (33), machine screw (34), two insulating washers (35) and insulator (36).

15. Remove cam cover stud (37) and cam cover spring (38).

16. Remove cam cover (39) by removing machine screw (40), collar (41), spring washer (42) and flat washer (43).

17. Remove tube clamp (44) by removing machine screw (45) and flat washer (46).

18. Remove tube clamp (47) secured by machine screw (48).

19. Remove tube clamp (49) secured by machine screw (50).

20. Remove rangefinder tube assembly (51), being careful not to tip rangefinder tube, thus preventing balls and spacers from falling out of upper opening. Place masking tape over upper opening, securing balls and spacers within the tube and proceed to further disassemble camera.

NOTE: On current rangefinder tube assemblies, a crimping operation has been added to upper end of tube, preventing the possibility of balls and spacers falling out.

21. Unsolder A lead, B lead and disconnect C lead of receptacle (figure 3) from rangefinder circuit plate terminals.

22. Remove junction insulator (52).

23. Remove rangefinder assembly (53) secured by six machine screws (54), being careful when removing housing that pinion shaft does not become bent or broken. Remove shutter release button (55). If further disassembly is necessary see figure 18.

24. Remove back assembly (56) by removing six machine screws (57) and two wire clips (58). If further disassembly is required see figure 19.

25. Remove bed complete (59) from body complete (63) by removing eight each of machine screws (60), lock washers (61) and flat washer (62). If further disassembly is necessary see figure 20.

B. CAMERA BASIC - REASSEMBLY (figure 15)

1. Position bed complete (59) in body complete (63) using eight each of flat washer (62), lock washer (61) and machine screw (60) Check bed for squareness, open and close bed making sure bed is operating properly. Adjust if necessary.

2. Assemble back assembly (56) using two wire clips (58) and six machine screws (57).

3. Assemble shutter release button (55) and position rangefinder housing assembly (53) in body complete, being careful not to bend or damage pinion shaft. Adjust rangefinder housing assembly, move forward and backward and press shutter release button until button correctly operates the switch, riveted to rangefinder circuit plate. When proper adjustment has been made, secure rangefinder in position using six machine screws (54).

4. Assemble junction insulator (52) to three terminals of circuit plate assembly.

5. Connect A, B and C leads from receptacle to three terminals on rangefinder circuit plate, see figure 3. Solder A and B leads and crimp C lead.

6. Position rangefinder tube assembly (51) in camera body.

7. Assemble tube clamp (49) using machine screw (50).

8. Assemble tube clamp (47) using machine screw (48).

9. Apply a small amount of Cordo #2055 adhesive to underside (formed portion) of tube clamp (44). Assemble washer (46) and tube clamp using machine screw (45). Do not tighten machine screw.

10. Assemble cam cover (39) using flat washer (43), spring washer (42), collar (41) and machine screw (40).

11. Assemble cam cover spring (38) and cam cover stud (37). The cover should not exhibit any looseness when closed and cam cover spring should keep cover in open position for cam changing. Adjust if necessary.

12. Assemble lower left handle bracket (32) using insulator (36), two insulating washers (35), machine screw (34) and machine screw (33).

13. Position tube clamp (30) and press rangefinder tube against rear partition and tighten machine screw (48) and assemble machine nut (31).

14. Assemble upper left handle bracket (26) using insulator (29), two insulating washers (28) and two machine screws (27).

15. Assemble lower right handle bracket (22) using insulator (25), two insulating washers (24) and two machine screws (23).

16. Assemble upper right handle bracket (16) using insulator (21), two insulating washers (20), two machine screws (19), two lock washers (18) and two machine nuts (17).

17. Assemble handle (15).

18. Position bellows portion of front standard complete (11) in camera body and secure with three special machine screws (14), two machine screws (13) and six bellows clips (12). Lubricate two rails on bed yoke and position front portion of front standard in bed yoke. Check sliding and locking action of front standard. Adjust if necessary.

19. Assemble focusing scale plate (10), exposure guide spring (9), exposure guide (8) and proceed with Actuating Bracket Adjustment Part II, paragraph E before assembly of focusing scale indicator (7). If necessary, make double vision adjustment see Part II, paragraph D. Assemble focusing scale cover cover assembly (6), lock in place with focusing scale cover lock (located in upper part of battery compartment) and assemble clip (5) between cover lock and camera body.

20. Assemble two batteries (4) in battery compartment. The red positive (+) end on the left side and black negative (-) end on right side.

21. Assemble battery cover (3) by pressing inward and slide to the right until locked in place.

22. Assemble focusing frame assembly (2) in position on back assembly.

23. Assemble hood assembly (1).

24. Check all operations of the camera and make necessary adjustments. See Super Graphic Analyzer Camera Test Part III, paragraph B.

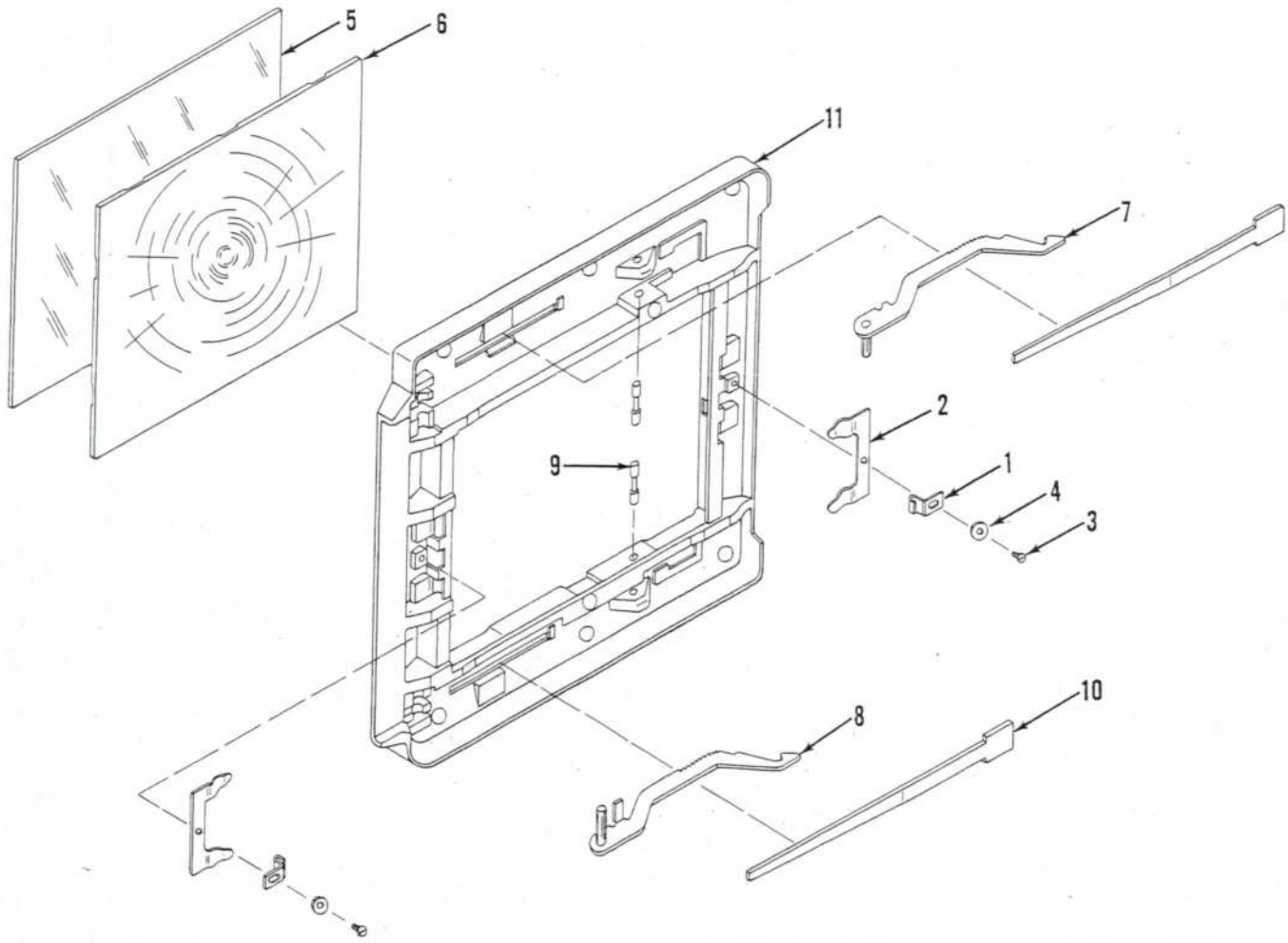

Figure 16. FOCUSING FRAME ASSEMBLY

C. FOCUSING FRAME - DISASSEMBLY (figure 16)

1. Remove two retainers (1) and two retainers (2) by removing two machine screws (3) and two flat washers (4).

2. Remove ground glass focusing screen (5) and Ektalite screen (6).

3. Remove arm assembly (7) or (8) by lifting up on hook end and pulling straight back

4. Remove pin (9) by depressing spring (10) relieving spring tension on shaft of pin and drive pin toward large opening in focusing frame (11) and remove spring (10).

D. CLEANING - GROUND GLASS FOCUSING AND EKTALITE SCREEN

1. Wash ground glass focusing screen (5) and Ektalite screen (6) with soap and water. Rinse thoroughly and dry.

CAUTION: Do not use cleaner containing an abrasive or solvent on either ground glass or Ektalite screen that will scratch or react to plastic.

E. FOCUSING FRAME - REASSEMBLY (figure 16)

1. If spring (10) and Pin (9) have been removed from focusing frame (11), locate spring in position in focusing frame, depress spring and drive pin in place.

2. Use a small tool to lift upward on tapered end of spring (10) and assemble arm assembly (8) or (7). Use a tool that will not scratch or damage painted surfaces of focusing frame.

3. Assemble Ektalite screen (6) and ground glass focusing screen (5) so that the grooved side of Ektalite screen is in contact with frosted side of ground glass screen. Polished side of the ground glass screen will be on the outside.

4. Position two retainers (2), two retainers (1), two flat washers (4) and secure in place, using two machine screws (3).

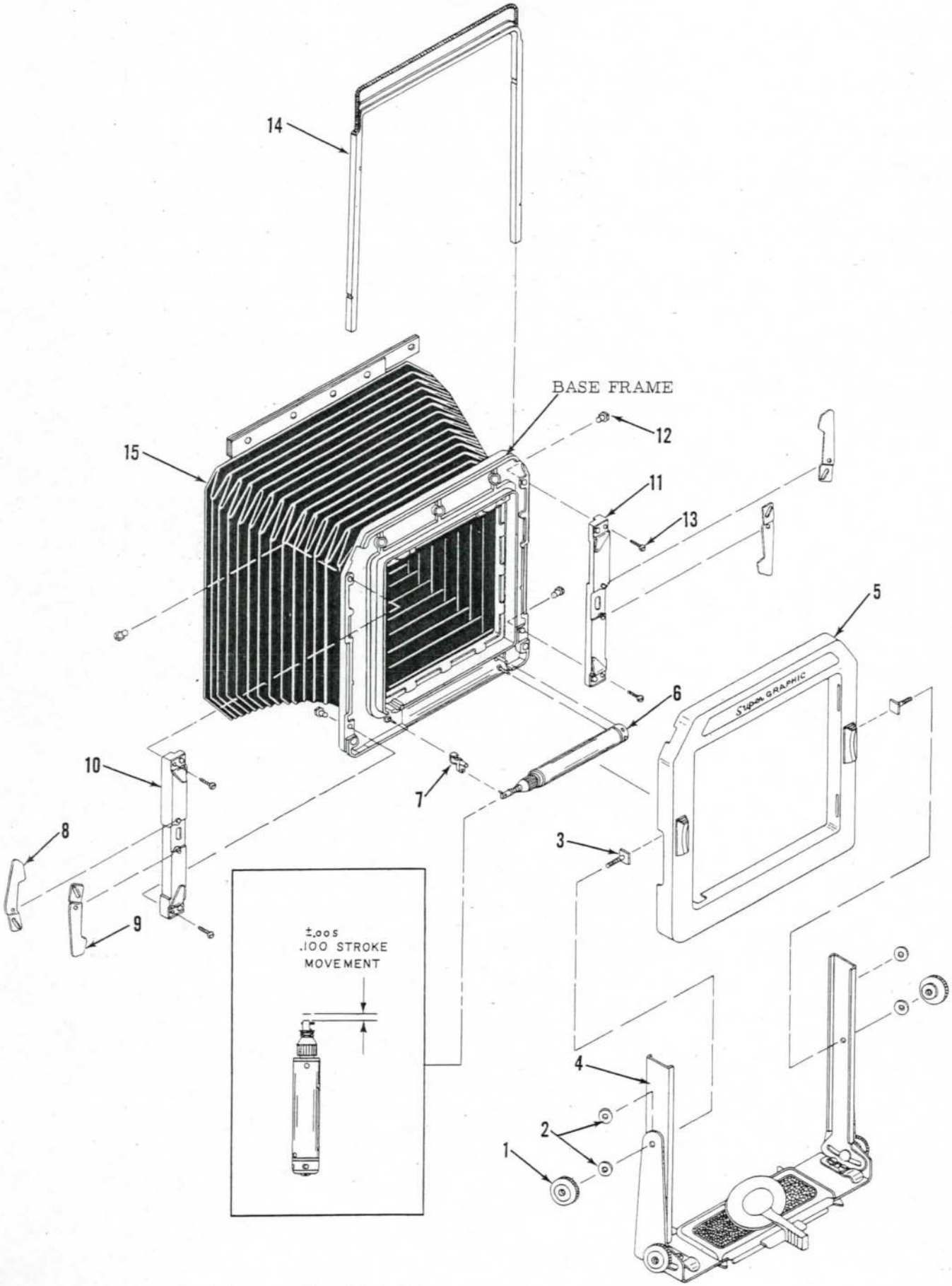

Figure 17. FRONT STANDARD COMPLETE

F. FRONT STANDARD COMPLETE - DISASSEMBLY (figure 17)

1. Remove locking knob (1) and flat washer (2) from two upper sides of front standard assembly. Ends of locking stud are staked.

2. Spread sides of front standard assembly (4) and lift upward on front frame assembly (with bellows and finder attached). Remove flat washer (2) and locking stud (3) from two sides. If disassembly of front standard assembly (4) is necessary see figure 17A.

3. Remove front frame assembly (5), solenoid assembly (6) and shutter trip crank (7).

4. Remove two upper locks (8) and two lower locks (9).

5. Remove right stile assembly (10) and left stile assembly (11) by removing four special machine nuts (12) and four machine screws (13).

6. Remove finder complete (14) from base plate of bellows complete (15).

NOTE: Do not remove bellows from base plate.

G. FRONT STANDARD COMPLETE - REASSEMBLY (figure 17)

1. Assemble finder complete (14) in position in base frame of bellows complete (15) making sure that lower notches face the outside.

2. Assemble stile assembly left (11) and stile assembly right (10) using four machine screws (13) and four special machine nuts (12).

3. Position two lower locks (9) and two upper locks (8) on bosses and under springs on stile assemblies.

4. Assemble shutter trip crank (7), solenoid assembly (6) and front frame assembly (5). Apply paraffin to sliding surfaces of two locking studs (3) and assemble in opening between bellows base frame and front frame assembly.

5. Position the above sub assembly in place in front standard assembly (4) and assemble flat washer (2) between supports and front standard on two sides.

6. Assemble flat washer (2), two locking knobs(1) and stake end of locking stud on two sides.

H. FRONT STANDARD ASSEMBLY - DISASSEMBLY (figure 17A)

1. Remove right and left supports (1) and (2) by removing locking knob (3), flat washer (4) special machine screw (5) and special flat washer (6) from two sides.

NOTE: Ends of machine screw (5) are staked.

2. Remove special machine nut (7), special machine screw (8), lock lever (9), upper locking plate assembly (10) and lower locking plate assembly (11).

3. Remove right and left stops (12) and (13) by removing four special machine screws (14).

4. Clean metal parts of front standard with solvent trichlorethylene or equal.

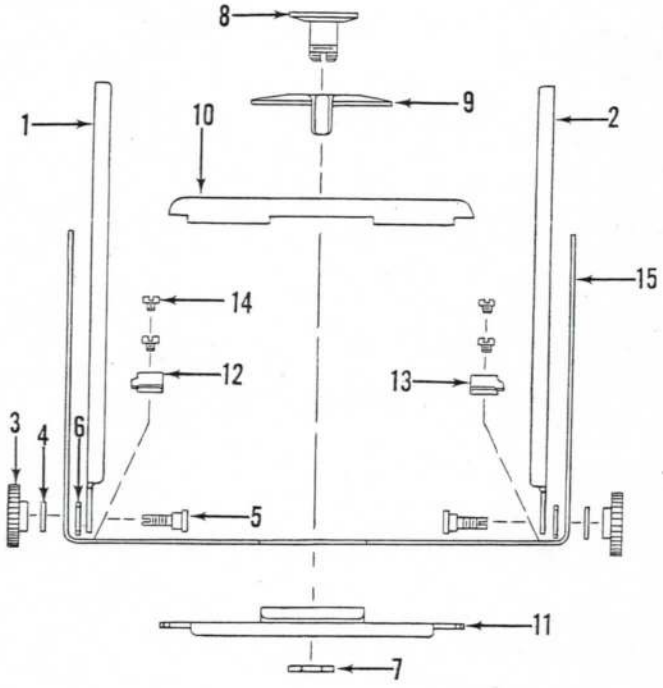

Figure 17A. FRONT STANDARD ASSEMBLY

J. FRONT STANDARD ASSEMBLY - REASSEMBLY (figure 17A)

1. Assemble left and right stops (13) and (12) and secure with four stop screws (14) to front standard (15).

2. Position lower locking plate assembly (11), upper locking plate assembly (10), lock lever (9), special machine screw (8) assemble and tighten special machine nut (7). ← 7/16" socket

NOTE: Before assembling lower locking plate assembly (11) wipe a light coat of Dow-Corning Hi-Vac silicone grease to sand-blasted surfaces on two sides. Apply Lubriplate #107 to all contacting surfaces of lock lever (9) and wipe off all visible excessive lubricant after assembly.

3. Position left and right supports (2) and (1) assembling special flat washer (6) between support and front standard, special machine screw (5), flat washer (4) and locking knob (3) on two sides. Stake ends of special machine screw (5).

4. Check locking action of front standard on bed yoke. If adjustment is necessary, remove lock nut (7) and turn lock screw (8) counter clockwise to tighten or clockwise to loosen. When proper locking action has been obtained, assemble lock nut (7) and tighten.

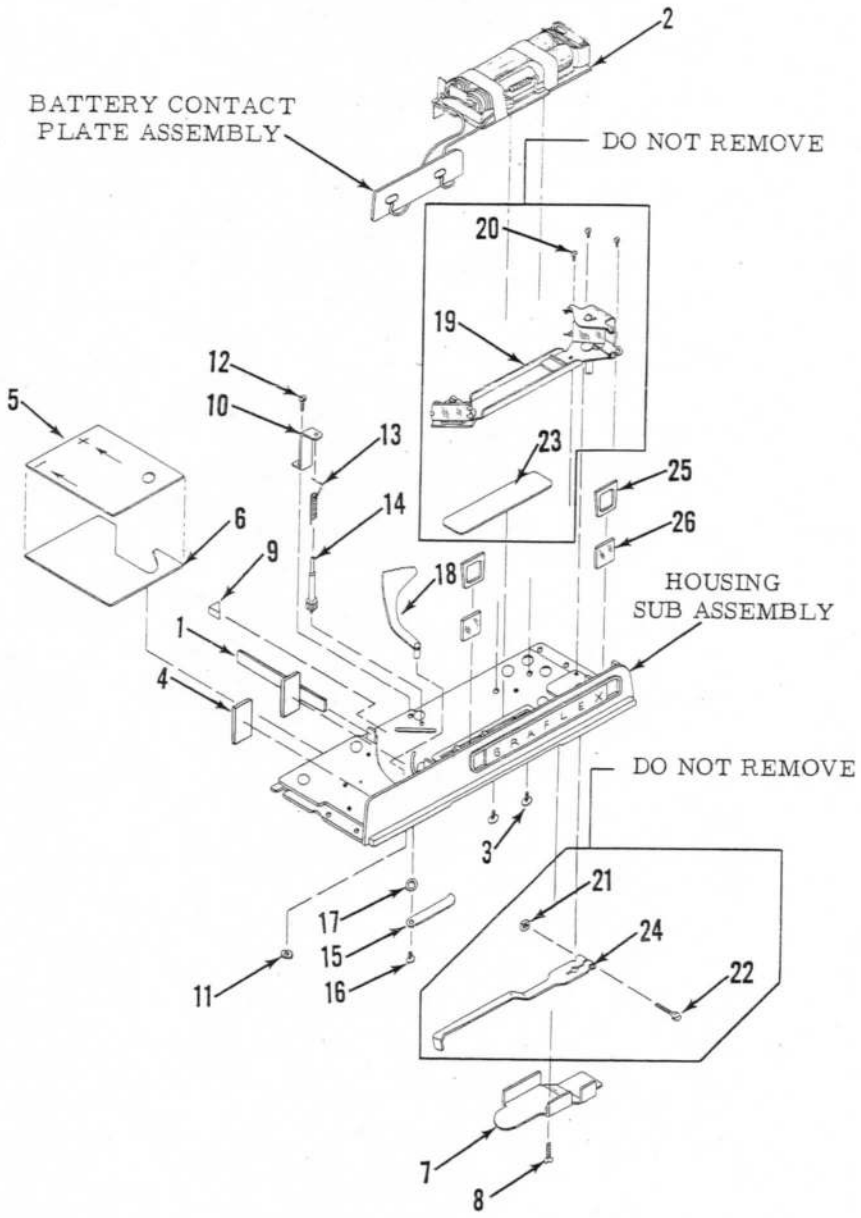

Figure 18. RANGEFINDER HOUSING COMPLETE

K. RANGEFINDER HOUSING COMPLETE - DISASSEMBLY (figure 18)

1. Remove battery partition (1) cemented to rangefinder housing bosses.

2. Remove circuit plate complete (2) secured by two machine screws (3). Lift upper left corner of insulators (5 and 6) (cemented together) and remove battery contact plate assembly, cemented to two bosses located on inner front of rangefinder housing. The battery contact assembly is part of the circuit plate.

NOTE: If rangefinder housing is to be returned to a Graflex Service Department, do not disassemble any further. See page 43 for nearest Graflex Service Department for rangefinder housing exchange and also state in correspondence that focusing scale indicator is to be supplied.

3. If necessary, remove two battery contact plate insulators (4) (cemented between two bosses located on inner front of rangefinder housing) and insulators (5 and 6).

NOTE: Early cameras having electrical tape on rear side of battery contact plate will not have insulator (4).

4. Remove rangefinder shield (7) secured by machine screw (8). If necessary, remove sector bumper (9).

5. Remove pinion bracket (10) secured by machine nut (11) and machine screw (12). Remove pinion spring (13) and pinion (14).

6. Remove rangefinder lever (15) secured by machine screw (16). Remove lockwasher (17) and sector assembly (18).

NOTE: Do not remove the following: base complete (19), machine screws (20), machine nut (21), special machine screw (22), rangefinder housing cover (23) or rangefinder arm (24); however, see figure 5B of Parts List for procurable items on base complete.

7. If necessary, remove two window retainers (25) and two rangefinder windows (26), cemented in place in housing sub assembly.

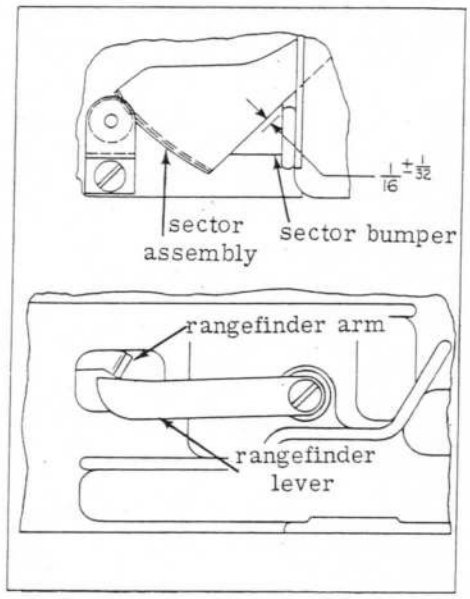

Figure 18A. Lever & Sector Assembly

L. RANGEFINDER HOUSING COMPLETE - RE-ASSEMBLY (figure 18)

1. If two rangefinder windows (26) have been removed, cement in place in housing sub assembly using Cordo #2055 adhesive and insert two window retainers (25).

2. Position sector assembly (18), lockwasher (17), rangefinder lever (15). Assemble machine screw (16) but do not tighten.

3. Assemble pinion (14), pinion spring (13), pinion bracket (10). Assemble machine screw (12) and machine nut (11). Tighten machine screw (12) first, then machine nut (11). Tighten machine screw (16). Assemble tail of pinion spring in gear tooth of pinion. Disengage sector assembly from pinion by lifting upward and apply approximately four turns initial tension on focusing pinion shaft and re-engage sector assembly so that gear tooth, with spring, does not engage in a tooth of sector assembly during its travel. Position of lever assembly and sector assembly is illustrated in figure 18A above.

4. If removed, recement sector bumper (9) in position as illustrated in figure 18A above.

5. Assemble rangefinder shield (7) and secure with machine screw (8).

6. If insulators (6 and 5) and insulator (4) have been removed, cement in place using 3 M EC 880 adhesive.

NOTE: If insulator (4) is being used with battery contact plate assembly having electrical tape on rear side, remove electrical tape.

7. Assemble circuit plate complete (2) and drive in two machine screws (3). Apply 3M EC880 adhesive to two bosses on inner front of rangefinder housing.

8. Apply 3M EC 880 adhesive to two rangefinder housing bosses and assemble battery partition (1).

9. Clean windows of rangefinder housing, to remove excess adhesive.

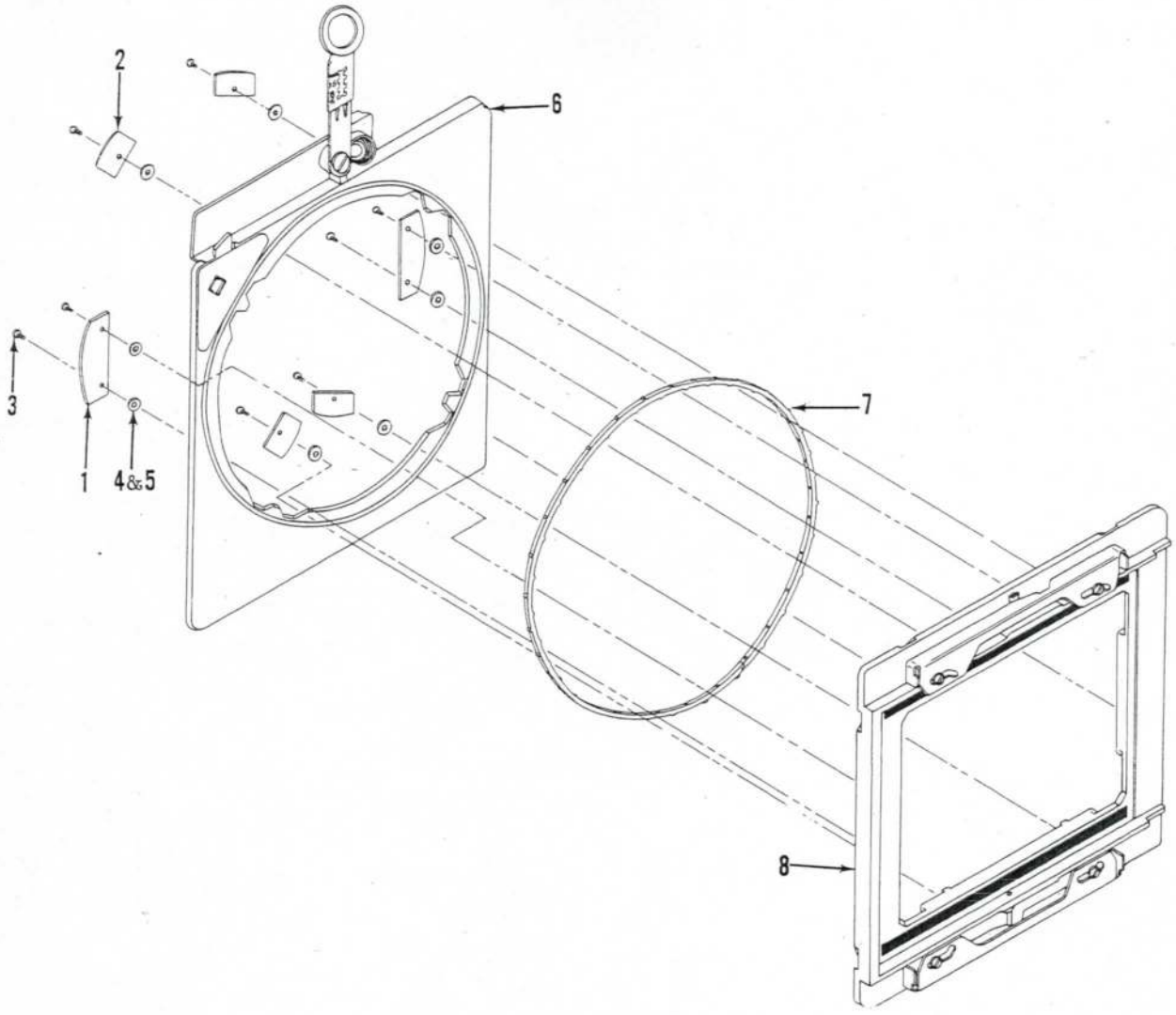

Figure 19. BACK ASSEMBLY

M. BACK ASSEMBLY - DISASSEMBLY (figure 19)

1. Remove two retainers (1) and four retainers (2) secured by eight machine screws (3). Remove flat washers (4 and 5), if used, and remove stationary frame complete (6). If disassembly of stationary frame complete is necessary, refer to figure 19A.

2. Remove revolving ring (7) from grooved track of revolving frame complete (8). If disassembly of revolving frame complete is necessary, see figure 19C.

N. BACK ASSEMBLY - REASSEMBLY (figure 19)

1. Lubricate both sides of revolving ring (7), using Mobilux Grease #2 or equal, and assemble ring into grooved track of revolving frame assembly (8).

2. Position stationary frame complete (6), flat washers (4 and 5), if used, and apply small amount of Mobilux Grease #2 to underside contacting surface of retainers (1 and 2) and secure with eight machine screws (3). Turn revolving frame several times making sure revolving ring is properly seated. Check revolving frame assembly for smooth operation. The revolving frame assembly should fit snug and turn without binding.

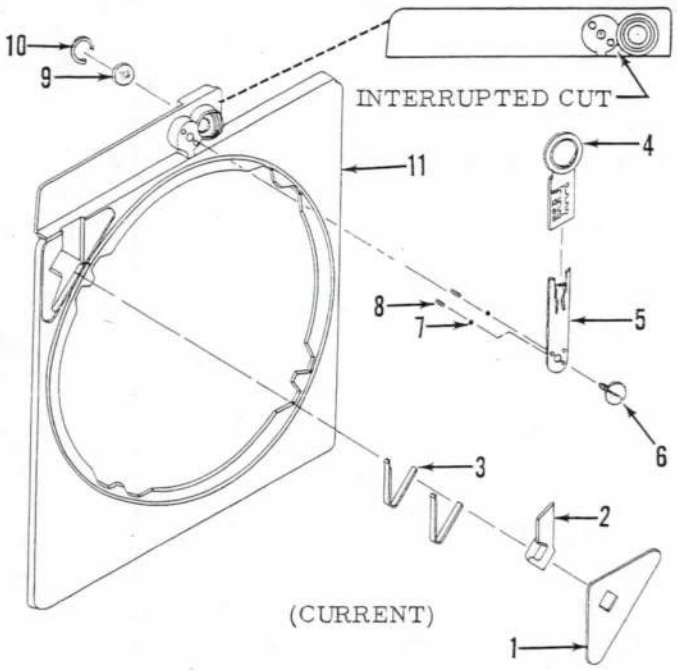

Figure 19A. STATIONARY FRAME COMPLETE

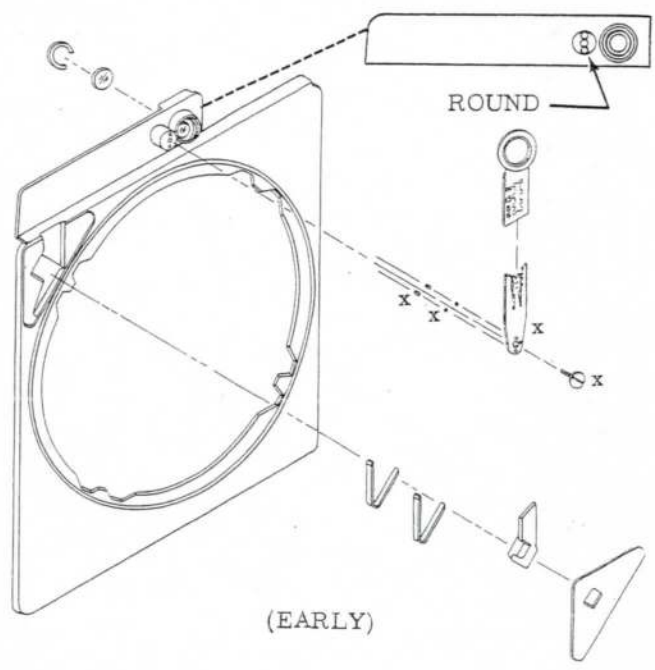

Figure 19B. STATIONARY FRAME COMPLETE

NOTE: A change has been made on the stationary frame as illustrated in figures 19A and 19B. Disassembly and reassembly procedures remain the same. Items marked x on figure 19B are not interchangeable with corresponding items in figure 19A. When ordering replacement parts for current or early stationary frame, refer to Parts List 6A or 6B.

P. STATIONARY FRAME COMPLETE - DISASSEMBLY (figure 19A)

1. If necessary, remove release button cover (1), cemented in place, remove release button (2) and two button springs (3) from cavity in stationary frame.
2. Remove peepsight assembly (4) from peepsight carrier (5).
3. Remove peepsight carrier (5), secured by special machine screw (6). Remove two steel balls (7) and two springs (8).
4. Remove window (9), from stationary frame assembly (11), secured by retaining ring (10).

Q. STATIONARY FRAME COMPLETE - REASSEMBLY (figure 19A)

1. Position window (9) in place in stationary frame (11) and secure with retaining ring (10).
2. Insert two carrier springs (8) into two small holes in boss of stationary frame for carrier peepsight mounting. Apply light coat of #44 Silicone Grease to two steel balls (7) and place a ball over each carrier spring. Apply paraffin to two sides of peepsight carrier (5) and apply Neolube to underside of head of special machine screw (6). Position peepsight carrier in place and drive in special machine screw.
3. Assemble peepsight assembly (4) to peepsight carrier (5).
4. Assemble two button springs (3) in place in cavity of stationary frame. Apply small amount of #44 Silicone Grease to release button (2) and position in place. Apply 3M 776 adhesive to area around cavity opening on stationary frame, keeping within .050 inch from edges of cavity. Assemble release lever cover (1). Remove any excess adhesive. Check release button, peepsight assembly and carrier peepsight for smooth operation.

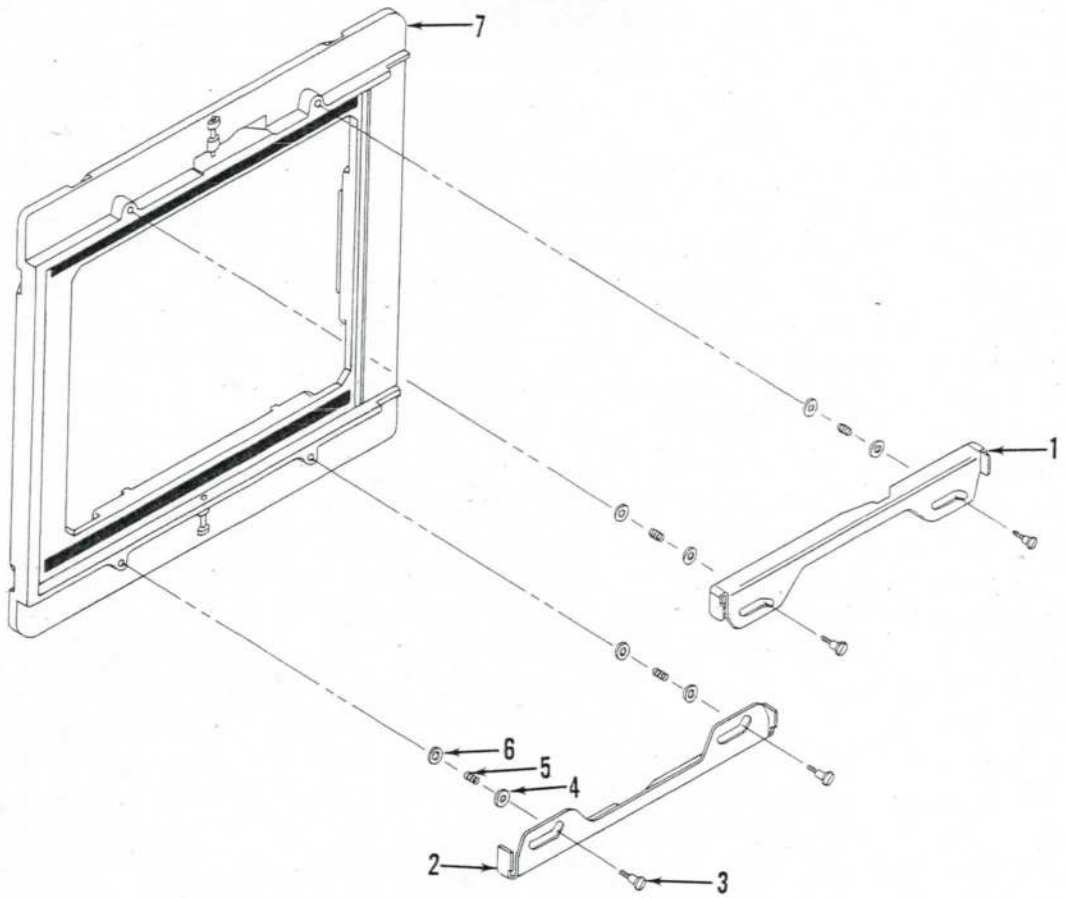

Figure 19C. REVOLVING FRAME COMPLETE

R. REVOLVING FRAME COMPLETE - DISASSEMBLY (figure 19C)

1. To remove upper or lower slidelocks (1 or 2), remove two each of the following: special machine screws (3), flat washers (4), slidelock springs (5), and flat washers (6).

S. REVOLVING FRAME COMPLETE- REASSEMBLY (figure 19C).

1. Position two each of the following: flat washer (6), slidelock springs (5), flat washers (4) and position lower or upper slidelock (2 or 1) and secure in place with two special machine screws (3).

T. BED COMPLETE - DISASSEMBLY (figure 20)

1. Remove rangefinder actuating bracket (1) secured by two special machine screws (2) and actuating bracket plate (3).

2. Remove lock lever stop screw (4), unscrew yoke lock lever (5), remove flat washers (6 or 7), if used, and remove yoke lock sleeve (8).

3. Remove right yoke guide (9) secured by five machine screws (10) and remove bed yoke (11).

4. Remove left yoke guide (12) secured by two machine screws (13), lock washer (14)and four special machine screws (15). Remove yoke spring (16) from underside of yoke guide.

5. Remove right bed cover (17), secured by three machine screws (18); left bed cover (19) secured by three machine screws (20).

6. Remove focusing pinion assembly (21) and two focusing pinion springs (22).

7. Remove bed brace spring (23), from bed assembly (25), secured by two machine screws (24).

U. BED CLEANING

Clean bed assembly, bed guides and focusing pinion assembly with a cloth moistened in solvent trichlorethylene or equal. Wash all other metal parts in same solvent.

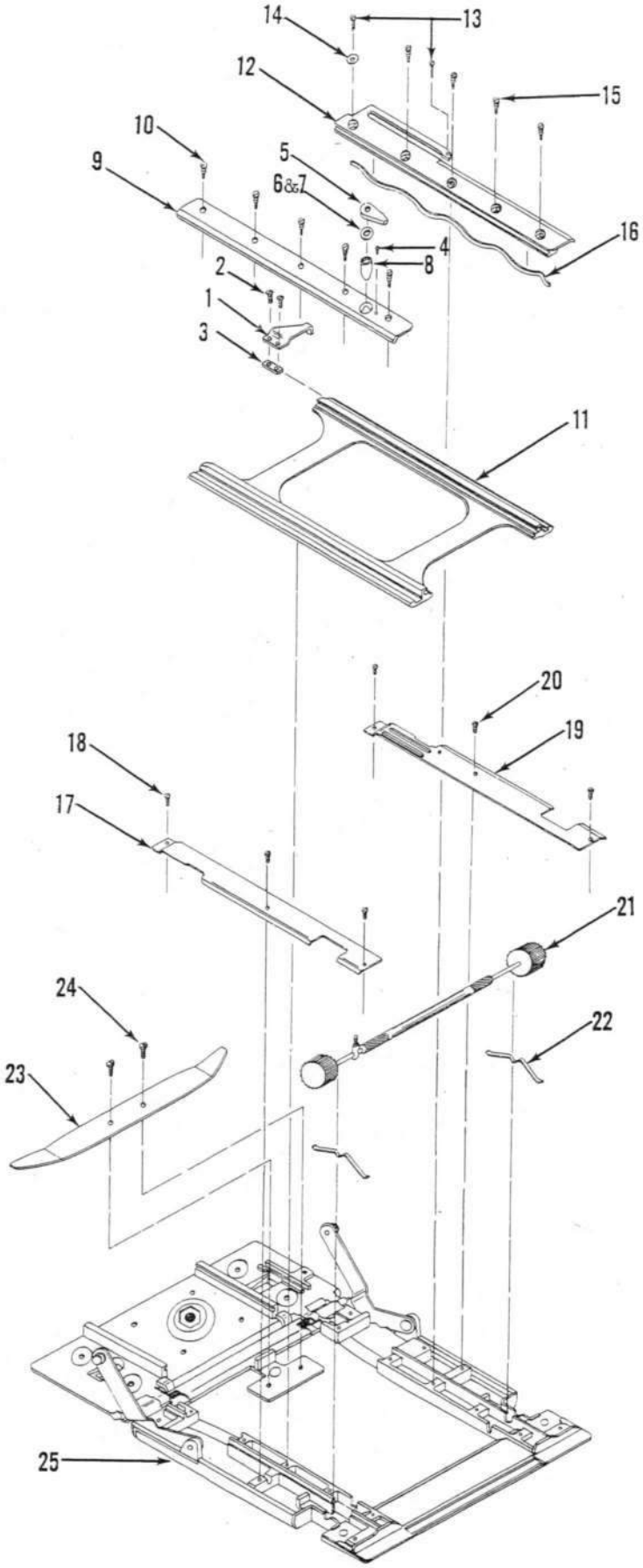

Figure 20. BED COMPLETE

V. BED COMPLETE - REASSEMBLY (figure 20)

1. Position bed brace spring (23) in bed assembly (25) and secure with two machine screws (24).

2. Use a small brush to apply lubricant SG 4455 (or equal) to two focusing springs (22) (cradle portion) and teeth of focusing pinion assembly (21). Position focusing springs and focusing pinion assembly in bed.

3. Assemble left bed cover (19) and secure with three machine screws (20); right bed cover (17) and secure with three machine screws (18).

4. Assemble yoke spring (16) to underside of left guide yoke (12) with straight end portion of spring toward rear of yoke guide. Use a small brush to apply #107 Lubriplate to groove of bed guide. Position left yoke guide, with yoke spring assembled thereto in position on bed. Insert and start four special machine screws (15) in four front mounting holes but do not tighten. Place lockwasher (14) in recess in rear mounting hole and drive in two machine screws (13).

5. Use a small brush to apply lubricant SG 4455 to teeth of bed yoke (11). Use a small brush to apply #107 Lubriplate to sliding surfaces of bed yoke and to groove of right yoke guide (9). Position bed yoke in groove of left bed guide and position right bed guide so that bed yoke is in groove, insert and start two machine screws (10) in two front mounting holes but do not tighten. Assemble yoke lock sleeve (8). Rack bed yoke back and forth to equalize focusing pinion on two sides. Tighten two machine screws in front two mounting holes in right bed guide. Drive three machine screws (10) in three rear mounting holes of right bed guide and tighten.

6. Assemble yoke lock lever (5) in such a manner that yoke lock lever will securely lock bed yoke within 60° clockwise movement and clear bed guide. Use flat washers (7 or 6) or any combination of these washers to obtain this adjustment. This lock lever adjustment should not exert excessive pressure causing interference with bed yoke travel. When proper locking action of the yoke lock lever has been obtained, assemble and adjust special lock lever stop screw (4). Rack bed yoke back and forth and check for smooth travel; adjust if necessary.

7. Slide actuating bracket plate (3) in slot on rear left side of bed yoke and position rangefinder actuating bracket (1). Secure temporarily with two machine screws (2). See Part I subparagraph E. 1 thru E. 3.

Part V

PARTS LIST

The Group Assembly Parts Lists are listed in disassembly order. The list divides the components into major assemblies, their subassemblies and parts. By the use of indented columns, the relationship of the assemblies to the subassemblies and parts is obtained.

The column titled "Figure and Index No." contains the index number in disassembly order of the items illustrated. Do not use the figure or index number in correspondence--specify the catalog or part number and name. Finish should also be included where specified.

The column titled "nomenclature" (including numbered columns) lists item nomenclature on the Graflex drawing. The assembly in the column marked "3" will be a component of the first assembly which preceded it in the column marked "2" etc. The code "NP" will indicate that this part is "not procurable" and that the "next higher assembly" (NHA) should be ordered. The code "AR" is used for bulk items when an indefinite amount may or may not be used "as required".

NOTE: SEE GRAFLEX SERVICE PARTS MANUAL PRICE SUPPLEMENT FOR PRICES OF PROCURABLE ITEMS.

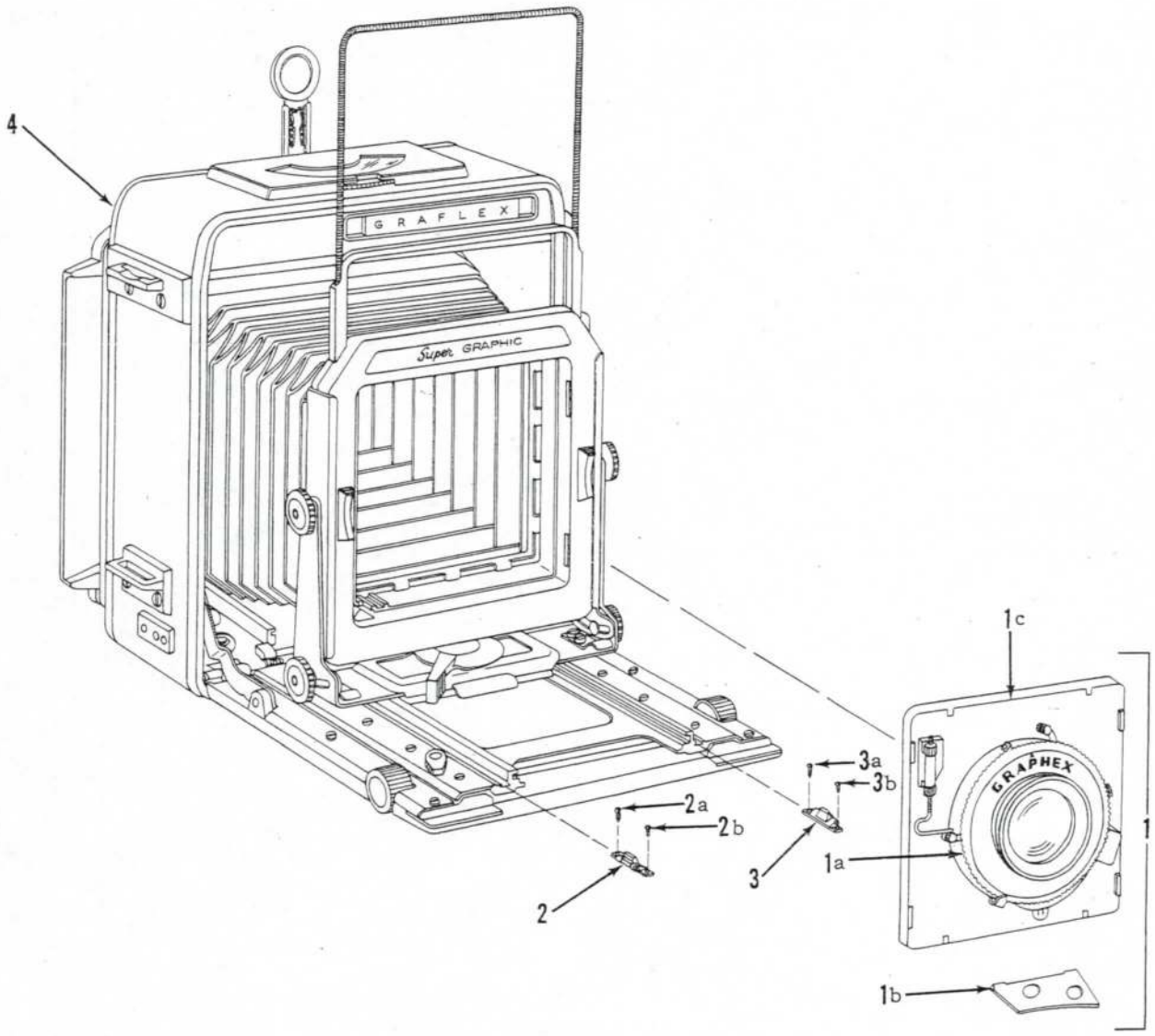

Figure 1. CAMERA COMPLETE

Figure and Index No.	Part Number	Nomenclature 1 2 3 4 5	Qty.
1-	Ref.	CAMERA COMPLETE - SUPER GRAPHIC	Ref.
-1	Ref.	. LENSBOARD COMPLETE (including lens in shutter)	1
-1a	Ref.	. . Lens in shutter (as selected)	1
-1b	Ref.	. . Cam - Lens (see page 29 for replacement cam)	1
		NOTE: The cam is selected after the lens has been optically measured for actual focal length (lens travel).	
-1c	Ref.	. . Lensboard Assembly (less lens in shutter)	1
		NOTE: See Section 8A for Super Graphic lensboards used with various shutters.	
-2	30655-G1	. Stop Assembly - Right (includes screws)	1
-2a	30661	. . Screw - Stop Assembly (pointed, rear)	1
-2b	30662	. . Screw - Stop Assembly (flat, front)	1
-3	30655-G2	. Stop Assembly - Left (includes screws)	1
-3a	30661	. . Screw - Stop Assembly (pointed, rear)	1
-3b	30662	. . Screw - Stop Assembly (flat, front)	1
-4	36000-G1	. Camera Basic (figure 2)	Ref.

Cam Procurement

1. Order by part number if known (stamped on cam) otherwise, refer to 2 and 3 below.

2. Determine the actual focal length of the lens, by optical measurement (to the nearest .001 of an inch). Specify this information when ordering, and use proper Catalog Number listed below.

3. In the event information in 2 above cannot be supplied, return the lens to the nearest Graflex Service Department, where the optical measurement will be determined and the proper cam supplied. See page 43 for address of nearest Graflex Service Department.

Cat. #3021 Cam - Standard, lenses of focal length of 90mm and from 127mm to 165mm inclusive plus 202mm and telephoto lenses of 25cm, 27cm, (270mm) and 38cm focal length . . . . .

Cat. #3022 Cam - Special, lenses of focal length other than those included in listing of Cat. #3021 and falling within the range of 88mm and 380mm . . . . . .

Cat. #9473 Collimation Service (applicable when par. 3 under cam procurement is required) . . . . . .

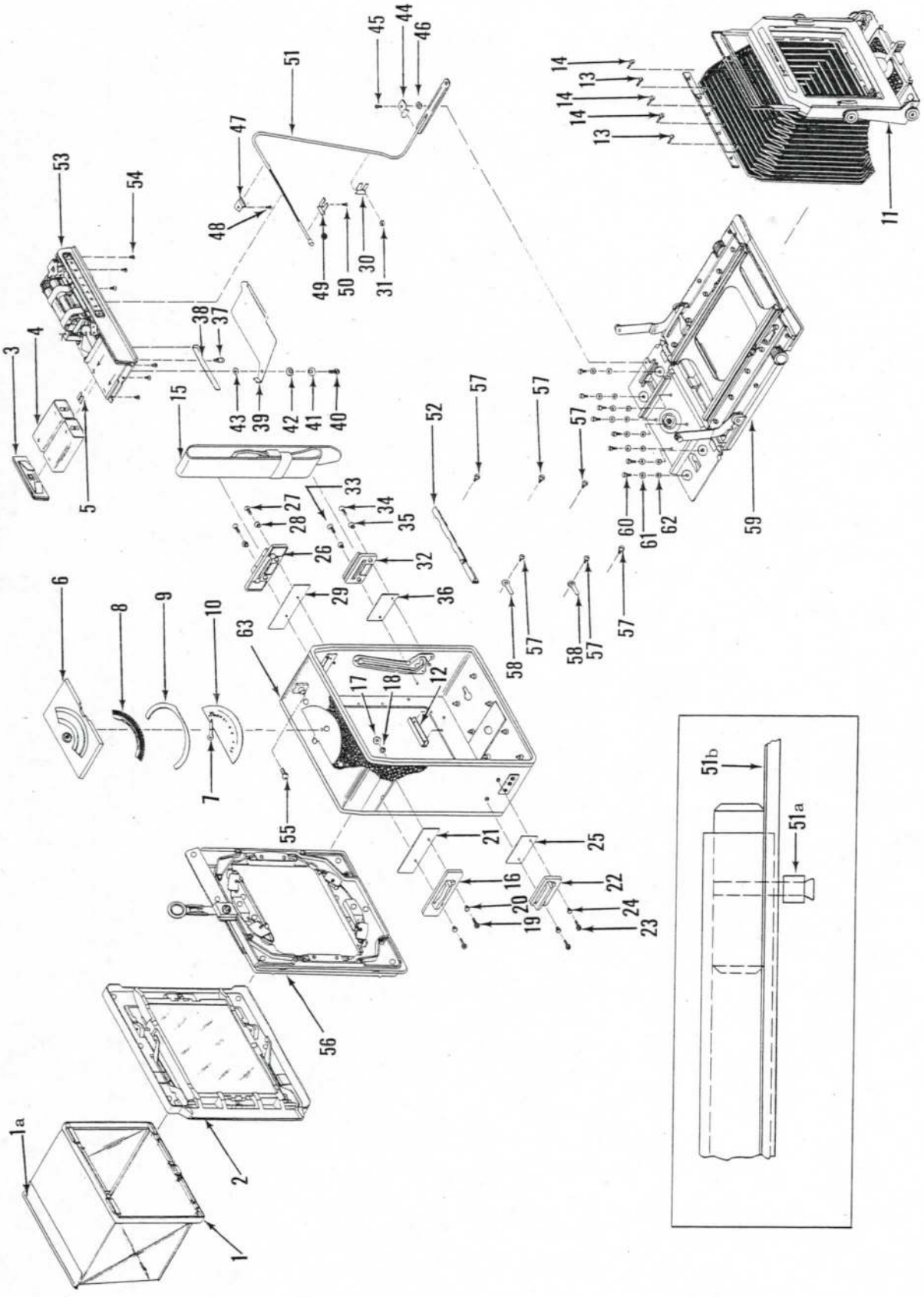

Figure 2. CAMERA BASIC

Figure and Index No.	Part Number	Nomenclature 1 2 3 4 5	Qty.	
2-	36000-G1	CAMERA BASIC - SUPER GRAPHIC (figure 1-5)	Ref.	
-1	36082-G1	. Hood Assembly	1	
-1a	36087-P1	. . Clip - Dark Slide	1	
-2	36073-G1	. Frame Assembly - Focusing (figure 3)	1	
-3	36198-G1	. Cover Assembly - Battery Compartment	1	
-4	33111	. Battery, 22-1/2 volt, flat type, Eveready Cat. #412 or equal.	2	Local Purchase
-5	36328-P1	. Clip - Retainer	1	
-6	36176-G1	. Cover Assembly - Focusing Scale	1	
-7	36002	. Indicator - Focusing Scale	1	
-8	36001-P1	. Guide - Exposure.	1	
-9	36197-P1	. Spring - Exposure Guide	1	
-10	36213-P1	. Plate - Focusing Scale	1	
-11	36096-G1	. Standard Complete- Front (figure 4).	1	
	Attaching Parts			
-12	32459	. Clip - Bellows	6	
-13	110-6-5	. Screw - Machine, 5/16 in.lg., #6-32 straight side binding head, slotted, steel, Cadmium Plate P-21 & Ebonol S-18.	2	
-14	31089-P8	. Screw - Machine (Special)	3	
		---***---		
-15	36006-P1	. Handle	1	
-16	36021-P1	. Bracket - Handle, Upper (right side)	1	
	Attaching Parts			
-17	200-4H	. Nut - Machine, #4 hex., steel, Black Oxide S-7 & Oil S-12 .	2	
-18	221-4	. Washer - Lock, internal tooth, for #4 screw, Shakeproof Type 12 Cat. #1204, steel, Black Oxide S-7 . . .	2	
-19	100-4R6	. Screw - Machine, 3/8 in.lg, #4-40 flat Phillips recessed head, steel, Chrome Plate P-19	2	
-20	36231	. Washer - Insulating, standard Staps, Parker-Kalon#106, nylon	2	
-21	36227-P1	. Insulator - Handle Bracket	1	
		---***---		
-22	36021-P2	. Bracket - Handle, Lower (right side).	1	
	Attaching Parts			
-23	100-4R5	. Screw - Machine, 5/16 in. lg., #4-40 flat Phillips recessed head, steel, Chrome Plate P-19.	2	
-24	36231	. Washer - Insulating, standard Staps, Parker-Kalon #106, nylon	2	
-25	36227-P2	. Insulator - Handle Bracket	1	
		---***---		
-26	36021-P1	. Bracket - Handle, Upper (left side)	1	
	Attaching Parts			
-27	100-4R5	. Screw - Machine, 5/16 in.lg., #4-40 flat Phillips recessed head, steel, Chrome Plate P-19.	2	
-28	36231	. Washer - Insulating, standard Staps, Parker-Kalon #106, nylon	2	
-29	36227-P1	. Insulator - Handle Bracket	1	
		---***---		
-30	36193-P2	. Clamp - Tube	1	
	Attaching Part			
-31	200-4H	. Nut - Machine, #4 hex., steel, Black Oxide S-7 & Oil S-12 .	1	
		---***---		
-32	36021-P2	. Bracket - Handle, Lower (left side).	1	
	Attaching Parts			
-33	100-4R6	. Screw -Machine, 3/8 in. lg., #4-40 flat Phillips recessed head, steel, Chrome Plate P-19	1	
-34	100-4R5	. Screw - Machine, 5/16 in. lg., #4-40 flat Phillips recessed head, steel, Chrome Plate P-19.	1	
-35	36231	. Washer - Insulating, standard Staps, Parker-Kalon#106, nylon	2	
-36	36227-P2	. Insulator - Handle Bracket	1	
		---***---		

ALWAYS ORDER BY PART NUMBER AND NAME AND INCLUDE FINISH WHERE SPECIFIED.

Figure and Index No.	Part Number	1 2 3 4 5	Nomenclature	Qty.
2-37	36128	.	Stud - Cam Cover.	1
-38	36130	.	Spring - Cam Cover	1
-39	36092-P1	.	Cover - Cam	1
	Attaching Parts			
-40	110-2-5	.	Screw - Machine, 5/16 in.lg., #2-56 straight side binding head, slotted, steel Cadmium Plate P-21 & Ebonol S-18.	1
-41	36244	.	Collar - Cam Cover	1
-42	30540-P2	.	Washer - Spring	1
-43	30473-P25	.	Washer - Flat, 0.281 in. OD, 0.093 in ID, 0.012 in. thick, steel, Black Oxide S-7 & Oil S-12	1
	---***---			
-44	36193-P1	.	Clamp - Tube	1
	Attaching Parts			
-45	102B3-4	.	Screw-Machine, 1/4 in.lg., #3-48 round head, slotted, brass, Ebonol S-18	1
-46	33500-P36	.	Washer - Flat, 0.312 in., OD, 0.128 in ID, 0.062 in. thick, phenolic	1
	---***---			
-47	34723-P2	.	Clamp - Tube	1
	Attaching Part			
-48	102-3-2	.	Screw - Machine, 1/8 in.lg., #3-48 round head, slotted, steel, Cadmium Plate P-21 & Ebonol S-18	1
	---***---			
-49	36193-P2	.	Clamp - Tube	1
	Attaching Part			
-50	102-3-2	.	Screw - Machine, 1/8 in. lg., #3-48 round head, slotted,steel Cadmium Plate P-21 & Ebonol S-18. . . .	1
	---***---			
-51	34739-G2	.	Tube Assembly - Rangefinder	1
-51a	36009	. .	Collar - Pin	1
-51b	36195	. .	Slide - Rangefinder, Actuating	1
-52	36246-P1	.	Insulator - Junction.	1
-53	36145-G1	.	Housing Complete - Rangefinder (figure 5)	1
	Attaching Part			
-54	102-2-2	.	Screw - Machine, 1/8 in. lg., #2-56 round head, slotted,steel, Cadmium Plate P-21 & Ebonol S-18. . . .	6
	---***---			
-55	36023	.	Button - Shutter Release	1
-56	36060-G1	.	Back Assembly (figure 6)	1
	Attaching Parts			
-57	110-6-3	.	Screw - Machine, 3/16 in.lg., #6-32 straight side binding head, slotted, steel, Cadmium Plate P-21 & Ebonol S-18	6
-58	36219	.	Clip - Wire	2
	---***---			
-59	36035-G1	.	Bed - Complete (figure 7)	1
	Attaching Parts			
-60	116-2-4	.	Screw - Machine, 1/4 in.lg., #2-56 pan head, slotted,steel, Cadmium Plate P-21 & Ebonol S-18 . . .	8
-61	221-2	.	Washer - Lock, Internal tooth, for #2 screw, Shakeproof Type 12, Cat. #1202, steel, Black Oxide S-7 & Oil S-12	8
-62	30473-P44	.	Washer - Flat, 0.250 in. OD, 0.099 in. ID, 0.025 in. thick, brass, Ebonol S-18.	8
	---***---			
-63	36020-G1	.	Body - Complete (figure 8)	1

ALWAYS ORDER BY PART NUMBER AND NAME AND INCLUDE FINISH WHERE SPECIFIED.

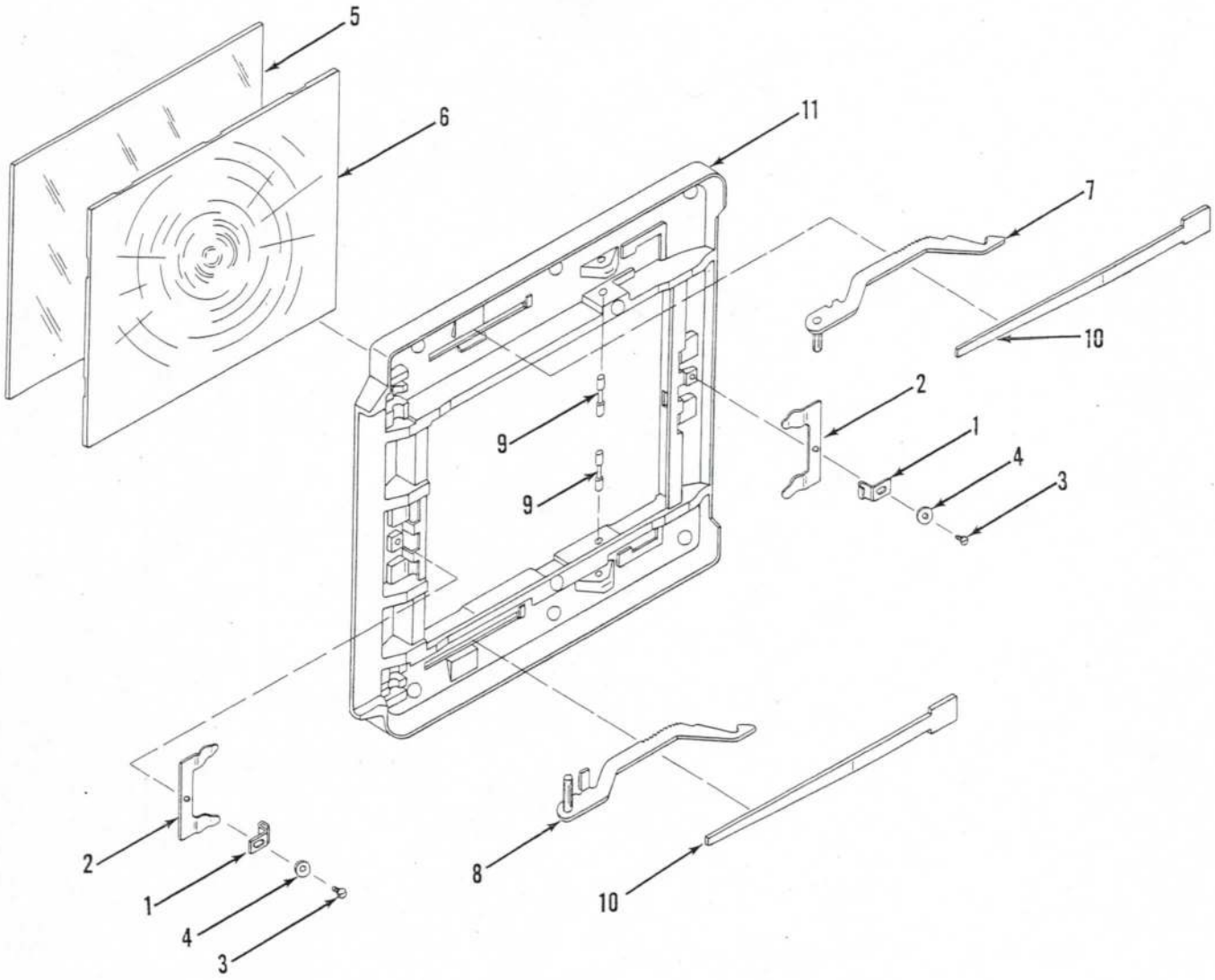

Figure 3. FOCUSING FRAME ASSEMBLY

Figure and Index No.	Part Number	Nomenclature 1 2 3 4 5	Qty.
3-	36073-G1	FRAME ASSEMBLY - FOCUSING (figure 2-2).	Ref.
-1	36076	. Retainer - Focusing Hood.	2
-2	36075-P1	. Retainer - Focusing Screen	2
	Attaching Parts		
-3	110-2-3	. Screw - Machine, 3/16 in.lg., #2-56 straight side binding head, slotted, steel, Cadmium Plate P-21 . . .	2
-4	30473-P25	. Washer - Flat, 0.281 in. OD, 0.093 in. ID, 0.012 in.thick,steel, Black Oxide S-7	2
		---***---	
-5	30414-P1	. Screen - Ground Glass Focusing	1
-6	31935-P1	. Screen - Ektalite.	1
-7	36079-G1	. Arm Assembly - Upper	1
-8	36079-G2	. Arm Assembly - Lower	1
-9	36077	. Pin - Spring.	2
-10	36078	. Spring - Arm Assembly.	2
-11	36074-P1	. Frame - Focusing	1

ALWAYS ORDER BY PART NUMBER AND NAME AND INCLUDE FINISH WHERE SPECIFIED.

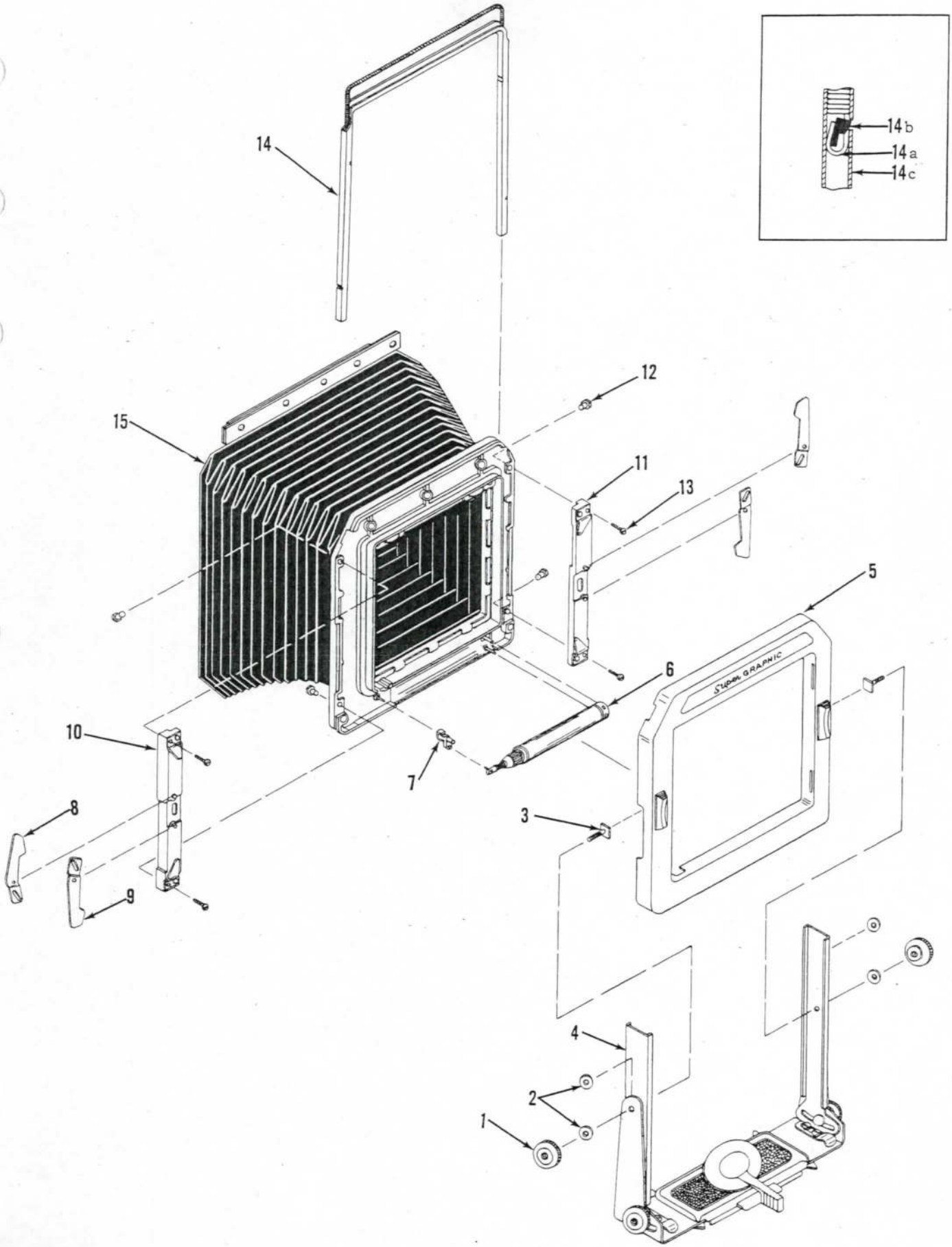

Figure 4. FRONT STANDARD COMPLETE

Figure and Index No.	Part Number	Nomenclature 1 2 3 4 5	Qty.	
4-	36096-G1	STANDARD COMPLETE - FRONT (figure 2-11)	Ref.	
-1	36105-P1	. Knob - Locking	2	
-2	30473-P6	. Washer - Flat, 0.312 in. OD, 0.128 in. ID, 0.015 in. thick, fibre	4	
-3	36127	. Stud - Front Frame Locking	2	
-4	36178-G1	. Standard Assembly - Front (figure 4A)	1	
-5	36117-G1	. Frame Assembly - Front	1	
	36212-P1	. . Plate - Name (Super Graphic)	1	
	36120	. . Stud - Lensboard Lock Button (press fit)	NP	NHA
	36179	. . Retainer - Lensboard Lock Button	NP	NHA
	36118-P1	. . Button - Lensboard Lock	NP	NHA
	36114-P1	. . Frame - Front	NP	NHA
-6	36133-G1	. Solenoid Assembly (figure 4B)	1	
-7	36123-P1	. Crank - Shutter Trip	1	
-8	36124-P1	. Lock - Upper	2	
-9	36124-P2	. Lock - Lower	2	
-10	36113-G1	. Stile Assembly - Right	1	
-11	36113-G2	. Stile Assembly - Left	1	
	Attaching Parts			
-12	36043	. Nut - Machine (Special)	4	
-13	110B2-5	. Screw - Machine, 5/16 in. lg., #2-56 straight side binding head, slotted, brass, Ebonol S-18	4	
	---***---			
-14	34848-G3	. Finder Complete	1	
-14a	34785-G1	. . Finder Assembly	1	
-14b	34787	. . Stop - Finder	2	
-14c	34795-P3	. . Frame - Finder	1	
-15	36125-G1	. Bellows Complete (figure 4C)	1	

ALWAYS ORDER BY PART NUMBER AND NAME AND INCLUDE FINISH WHERE SPECIFIED.

NP-Non Procurable

NHA - Next Higher Assembly

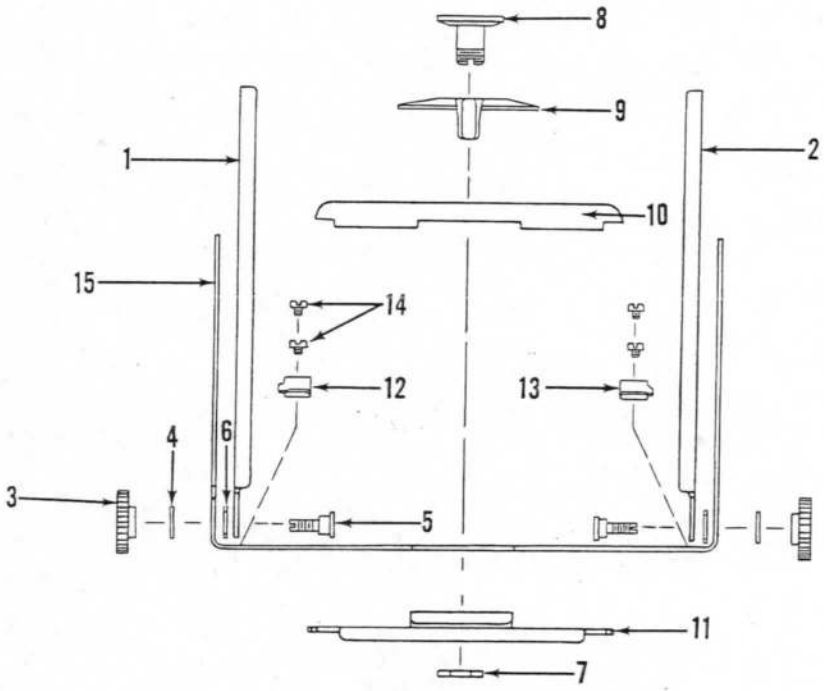

Figure 4A. FRONT STANDARD ASSEMBLY

Figure and Index No.	Part Number	Nomenclature 1 2 3 4 5	Qty.
4A-	36178-G1	STANDARD ASSEMBLY - FRONT (figure 4-4)	Ref.
-1	36100-P1	. Support - Right	1
-2	36100-P2	. Support - Left	1
	Attaching Parts		
-3	36105-P1	. Knob - Locking	2
-4	30473-P6	. Washer - Flat, 0.312 in. OD, 0.127 in. ID, 0.015 in. thick, fibre	2
-5	36104-P1	. Screw - Machine (Special)	2
-6	36214	. Washer - Flat (Special)	2
	---***---		
-7	36103	. Nut - Machine (Special) 7/16" socket wrench	1
-8	36102-P1	. Screw - Machine (Special)	1
-9	36101-P1	. Lever - Lock	1
-10	36109-G1	. Plate Assembly - Locking, Upper	1
-11	36106-G1	. Plate Assembly - Locking, Lower	1
-12	36098-P1	. Stop - Right	1
-13	36098-P2	. Stop - Left	1
	Attaching Parts		
-14	36099	. Screw - Machine (Special)	4
	---***---		
-15	36097-P1	. Standard - Front	1

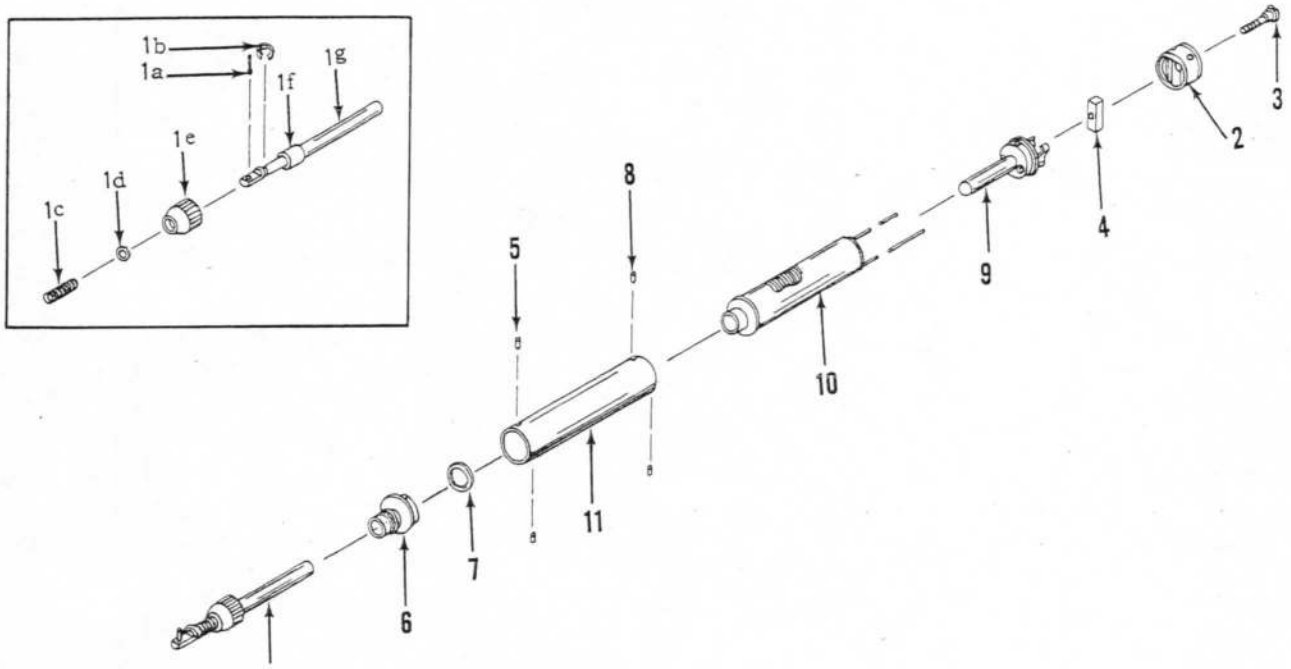

Figure 4B. SOLENOID ASSEMBLY

Figure and Index No.	Part Number	Nomenclature 1 2 3 4 5	Qty.
4B-	36133-G1	SOLENOID ASSEMBLY (figure 4-6)	Ref.
-1	36194-G1	. Plunger Assembly	1
-1a	35439-P2	. . Shaft - Plunger	NP NHA
-1b	30241-P13	. . Ring - Retaining, Waldes - Kohinoor Cat. #X5133-6, steel, parkerized	1
-1c	36122	. . Spring - Plunger.	1
-1d	30473-P19	. . Washer - Flat	NP NHA
-1e	36137-P2	. . Cap - Solenoid	NP NHA
-1f	36192-P1	. . Collar - Plunger	NP NHA
-1g	36312-P1	. . Plunger - Solenoid	NP NHA
-2	25855	. Cover - Bottom	1
	Attaching Part		
-3	36164	. Screw - Machine (Special)	1
		---***---	
-4	31297	. Cushion - Terminal	1
-5	36138	. Rollpin	NP NHA
-6	36136-P1	. Collar - Armature	NP NHA
-7	30473-P5	. Washer - Flat.	NP NHA
	or		
	30473-P22	. Washer - Flat.	NP NHA
-8	36138	. Rollpin	NP NHA
-9	36139-G1	. Base Assembly	NP NHA
-10	36143-G1	. Coil Assembly	NP NHA
-11	36135-P1	. Housing - Solenoid	NP NHA

NP - Non Procurable

NHA - Next Higher Assembly

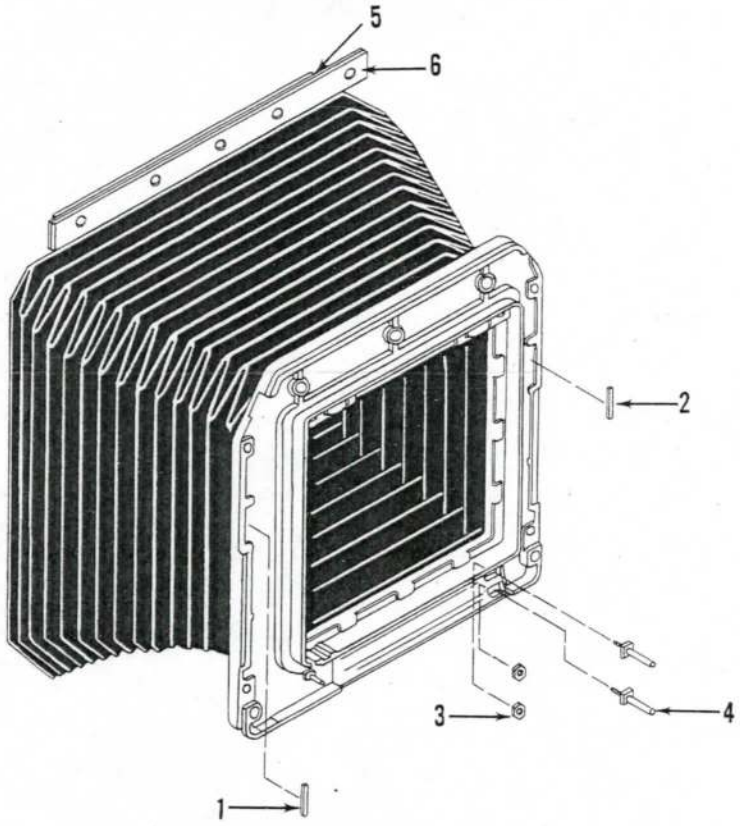

Figure 4C. BELLOWS COMPLETE

Figure and Index No.	Part Number	Nomenclature 1 2 3 4 5	Qty.
4C-	36125-G1	BELLOWS COMPLETE (figure 4-15)	Ref.
-1	36337-P1	. Shim - Right	1
-2	36337-P2	. Shim - Left	1
-3	200B1H	. Nut - Machine, #1 hex., brass, Tin Plate P-20	2
-4	36121-P1	. Contact - Solenoid	2
	No Number	. Insulator and Spring Sub Assembly (cemented)	Ref.
-5	36211-P2	. . Insulator	1
-6	36230-P1	. . Spring	1
	No Number	. Bellows and Frame Assembly	NP NHA

ALWAYS ORDER BY PART NUMBER AND NAME AND INCLUDE FINISH WHERE SPECIFIED.

NP - Non Procurable

NHA - Next Higher Assembly

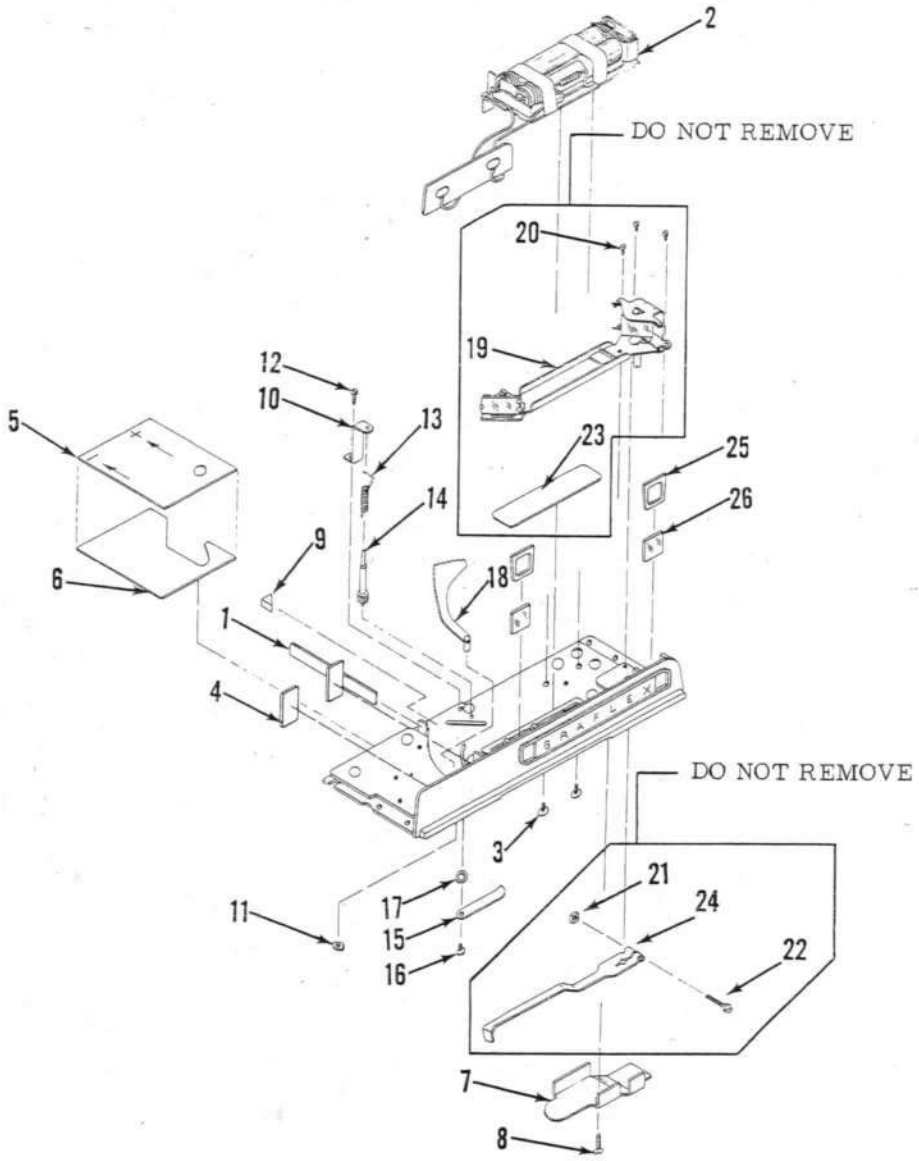

Figure 5. HOUSING COMPLETE - RANGEFINDER

Figure and Index No.	Part Number	Nomenclature 1 2 3 4 5	Qty.
5-	36145-G1	HOUSING COMPLETE - RANGEFINDER (figure 2-53).	Ref.
-1	36229	. Partition - Battery	1
-2	36207-G1	. Plate Complete - Circuit (figure 5A)	1
	Attaching Part		
-3	131-3-3	. Screw - Thread Cutting, 3/16 in. lg., #3, Shakeproof Type 23, binding (pan) head, slotted, steel, Black Oxide S-7 & Oil S-12	2
		---***---	
	36145-G3	. Housing Assembly - Rangefinder.	1
-4	36346	. . Insulator - Battery Contact Plate	2
-5	36217	. . Insulator (with arrows)	1
-6	36335-P1	. . Insulator (plain)	1
-7	36245-P1	. . Shield - Rangefinder Arm	1
	Attaching Part		
-8	100B3-4	. . Screw-Machine, 1/4 in. lg., #3-48 flat head, brass, Ebonol S-18	1
		---***---	

Figure and Index No.	Part Number	1 2 3 4 5	Nomenclature	Qty.	
5-9	36010	. .	Bumper - Sector	1	
-10	36147-P1	. .	Bracket - Pinion	1	
	Attaching Parts				
-11	200B2H	. .	Nut - Machine, #2 hex., brass, Ebonol S-18	1	
-12	116B2-3	. .	Screw - Machine, 3/16 in. lg., #2-56 pan head slotted, brass, Ebonol S-18	1	
	---***---				
-13	36149	. .	Spring - Pinion	1	
-14	36148-P1	. .	Pinion	1	
-15	36150-P1	. .	Lever - Rangefinder	1	
	Attaching Parts				
-16	102-2-2	. .	Screw - Machine, 1/8 in. lg., #2-56 round head, slotted steel, Black Oxide S-7 & Oil S-12. .	1	
-17	221-2	. .	Washer - Lock, Internal tooth for #2 screw, Shakeproof Type 12, Cat. #1202 steel, Black Oxide S-7 & Oil S-12.	1	
	---***---				
-18	36155-G1	. .	Sector Assembly	1	
-19	36158-G2	. .	Base Complete (see figure 5B for procurable items)	Ref.	DO NOT REMOVE SEE NOTE BELOW
	Attaching Part				
-20	116B2-3	. .	Screw - Machine, 3/16 in. lg., #2-56 pan head, slotted, brass, Ebonol S-18	Ref.	
	---***---				
-21	200-3S	. .	Nut - Machine, #3 square, steel Black Oxide S-7	Ref.	
-22	36152	. .	Screw - Machine (special)	Ref.	
-23	36153-P1	. .	Cover - Rangefinder Housing	Ref.	
-24	36169-P1	. .	Arm - Rangefinder	Ref.	
-25	36205	. .	Retainer - Window	2	
-26	36154	. .	Window - Rangefinder	2	
	Ref.	. .	Housing - Sub Assembly - Rangefinder	Ref.	

NOTE: To insure trouble free operation, remove index 1, 2 and 3 (figure 5) and return housing assembly to nearest Graflex Service Department. An alternate housing assembly (at nominal charge) with critical mirror and lever adjustments accomplished will be returned. A focusing scale indicator will also be furnished for installation. See page 43 for address of nearest Graflex Service Department. Use Catalog #9472 in correspondence when using the exchange program for Super Graphic Rangefinder Assemblies.

ALWAYS ORDER BY PART NUMBER AND NAME AND INCLUDE FINISH WHERE SPECIFIED.

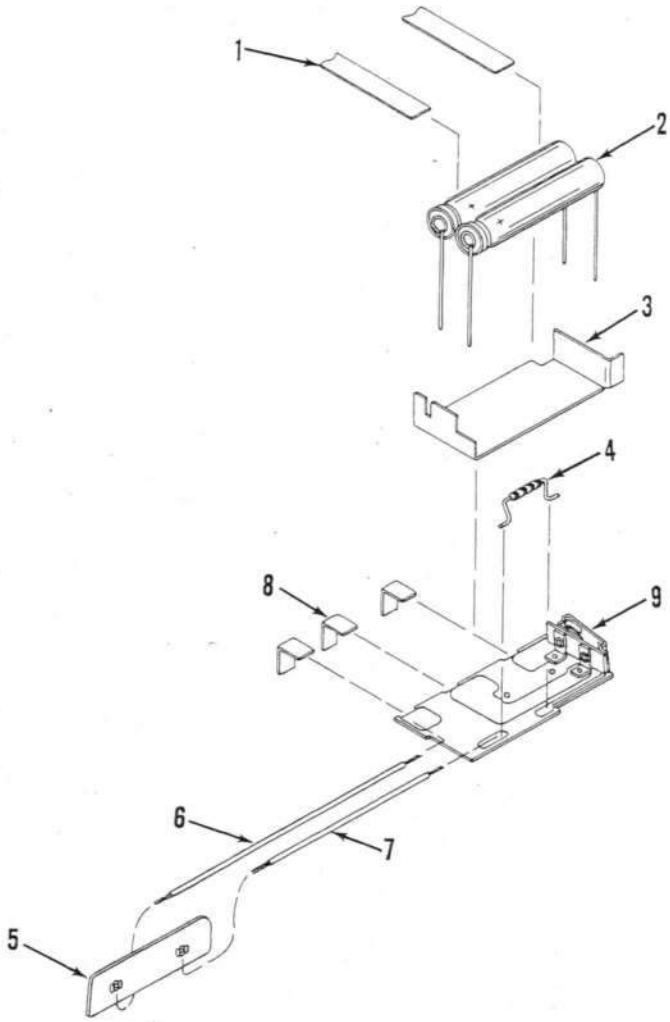

Figure 5A. CIRCUIT PLATE COMPLETE

Figure and Index No.	Part Number	Nomenclature 1 2 3 4 5	Qty.
5A-	36207-G1	PLATE COMPLETE - CIRCUIT (figure 5-2)	Ref.
-1	35858-P18	. Tape, 5/8 in.wide Black Mylar Cat. #850, 3M Scotch Brand or equal	AR Local Purchase
-2	36167-P1	. Capacitor	2
-3	36203	. Insulator	1
-4	402-27-2-2	. Resistor, 1/2 w, 2700 ohms ±10% Allen Bradley Co. or equal	1
-5	36208-G1	. Plate Assembly - Battery Contact	
-6	36207-P6	. Wire, No. 24 AWG, Black Insulation (4-1/2 in. lg.) Birnbach Radio Co. or equal	1 Local Purchase
-7	36207-P7	. Wire, No. 24 AWG, Black Insulation (3-1/4 in. lg.) Birnbach Radio Co. or equal	1 Local Purchase
-8	36166	. Terminal	3
-9	36162-G1	. Plate Assembly - Circuit	1

ALWAYS ORDER BY PART NUMBER AND NAME AND INCLUDE FINISH WHERE SPECIFIED.

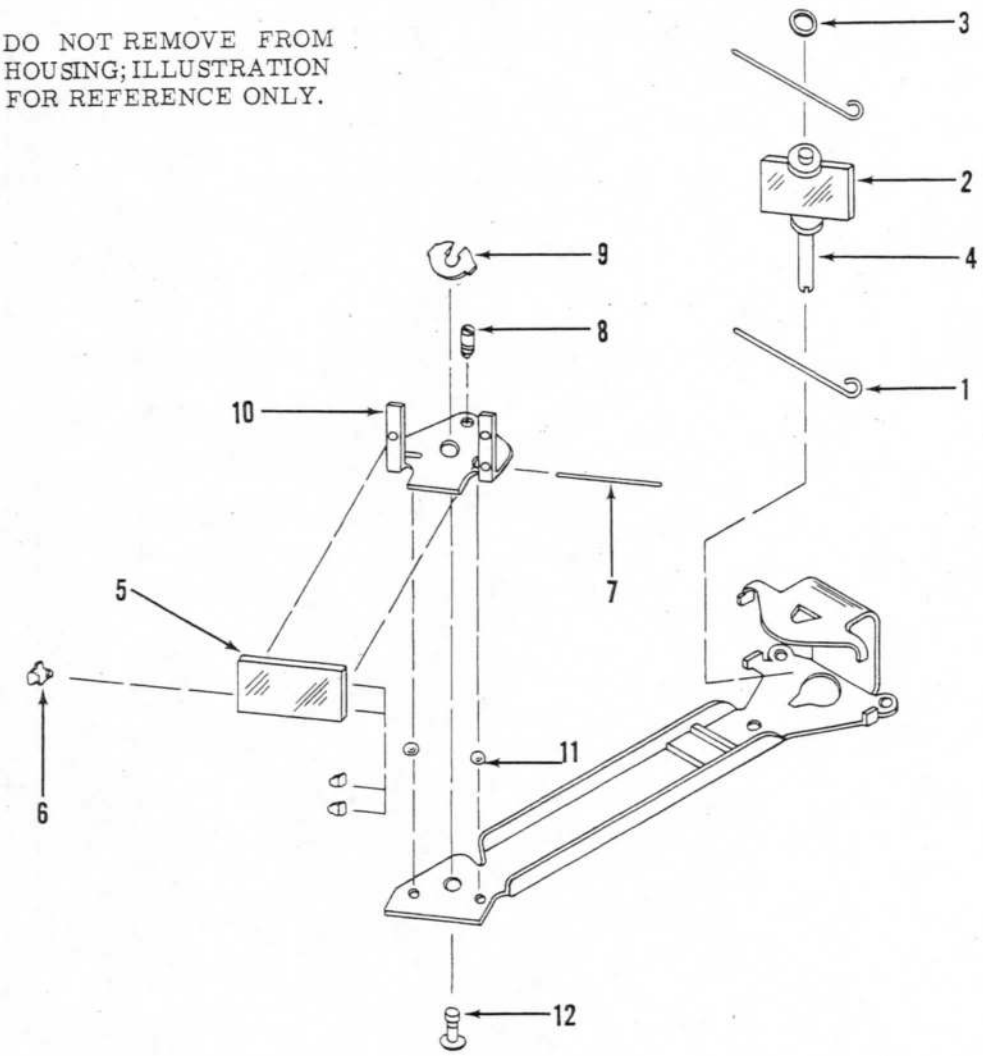

Figure 5B. BASE COMPLETE

Figure and Index No.	Part Number	Nomenclature 1 2 3 4 5	Qty.	
5B-	36158-G2	BASE COMPLETE (figure 5-19)	Ref.	
-1	36160	. Spring - Mirror Shaft	2	
-2	34712-P1	. Mirror - Opaque	NP	See Note
-3	35473-P9	. Washer - Flat, 0.187 in. OD, 0.129 in ID, 0.010 in. thick, brass	NP	See Note
-4	35159-P1	. Shaft - Opaque Mirror	NP	See Note
-5	34711	. Mirror - Transparent	1	
	Attaching Part			
-6	32416-P1	. Retainer - Mirror	3	
	---***---			
-7	36235	. Wire - Mount, 3/4 in. lg., 0.0260 in dia., steel music.	1	Local Purchase
-8	34709	. Screw - Coincidence (Special).	1	
-9	30241-P26	. Ring - Retaining, Black Oxide S-7	1	
-10	34710-P1	. Mount - Transparent Mirror	1	
-11	30539-P2	. Ball - Steel, 0.0625 in. dia.	2	
-12	34708	. Stud - Transparent Mirror Mount.	NP	See Note
	No Number	. Base Sub-Assembly.	Ref.	

NOTE: Exchange rangefinder housing assembly see note page 40.

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SERVICE DEPARTMENTS

These Departments are staffed with factory-trained workmen and equipped with proper facilities to service under warranty, adjust or repair all Graflex-made merchandise.

Much time will be saved if equipment is shipped by **Special Delivery.**

Be sure to supply complete instructions.

If unit comes within **warranty** period, **supply owner's name** and **date of purchase.**

Quotation estimate will be mailed promptly upon receipt and inspection of equipment, if requested. Return this promptly for speedy servicing of unit.

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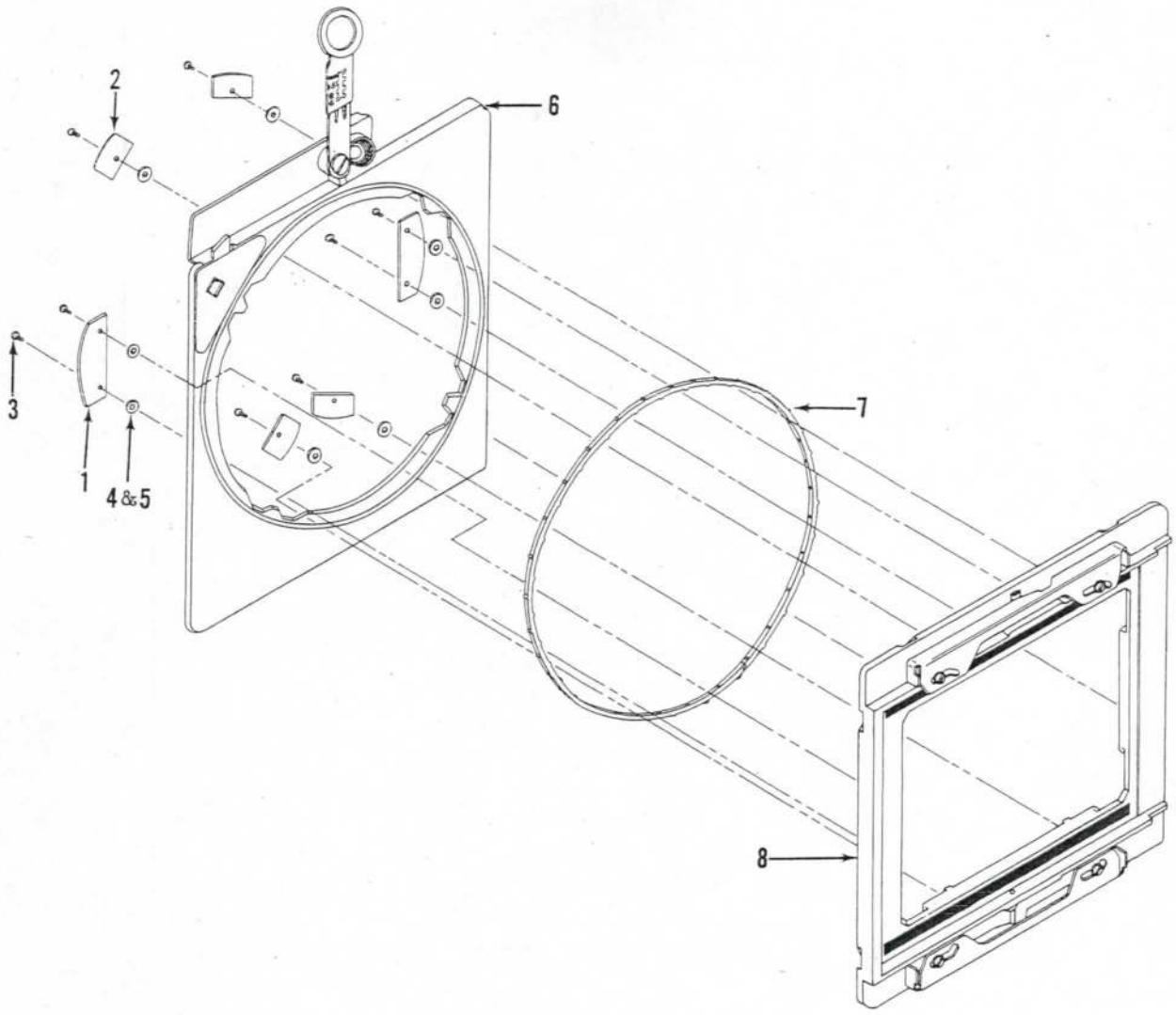

Figure 6. BACK ASSEMBLY

Figure and Index No.	Part Number	Nomenclature 1 2 3 4 5	Qty.
6-	36060-G1	BACK ASSEMBLY (figure 2-56)	Ref.
-1	36062-P1	. Retainer - Back (large)	2
-2	36063-P1	. Retainer - Back (small)	4
	Attaching Part		
-3	110-2-2	. Screw - Machine 1/8 in. lg., #2-56 straight side binding head slotted, steel, Cadmium Plate P-21 & Ebonol S-18	8
-4	30473-P28	. Washer - Flat, 0.250 in.OD, 0.099 in. ID, 0.012 in thick, brass, Ebonol S-18	AR
-5	30473-P42	. Washer - Flat, 0.250 in. OD, 0.099 in. ID, 0.016 thick brass, Ebonol S-18	AR
	---***---		
-6	36068-G2	. Frame Complete - Stationary (figure 6A) replaces 36068-G2X on early model	1
	36068-G2X	. Frame Complete - Stationary (figure 6B) replaced by 36068-G2	Ref.
-7	36061-P1	. Ring - Revolving	1
-8	36060-G2	. Frame Complete - Revolving (figure 6C)	1

ALWAYS ORDER BY PART NUMBER AND NAME AND INCLUDE FINISH WHERE SPECIFIED.

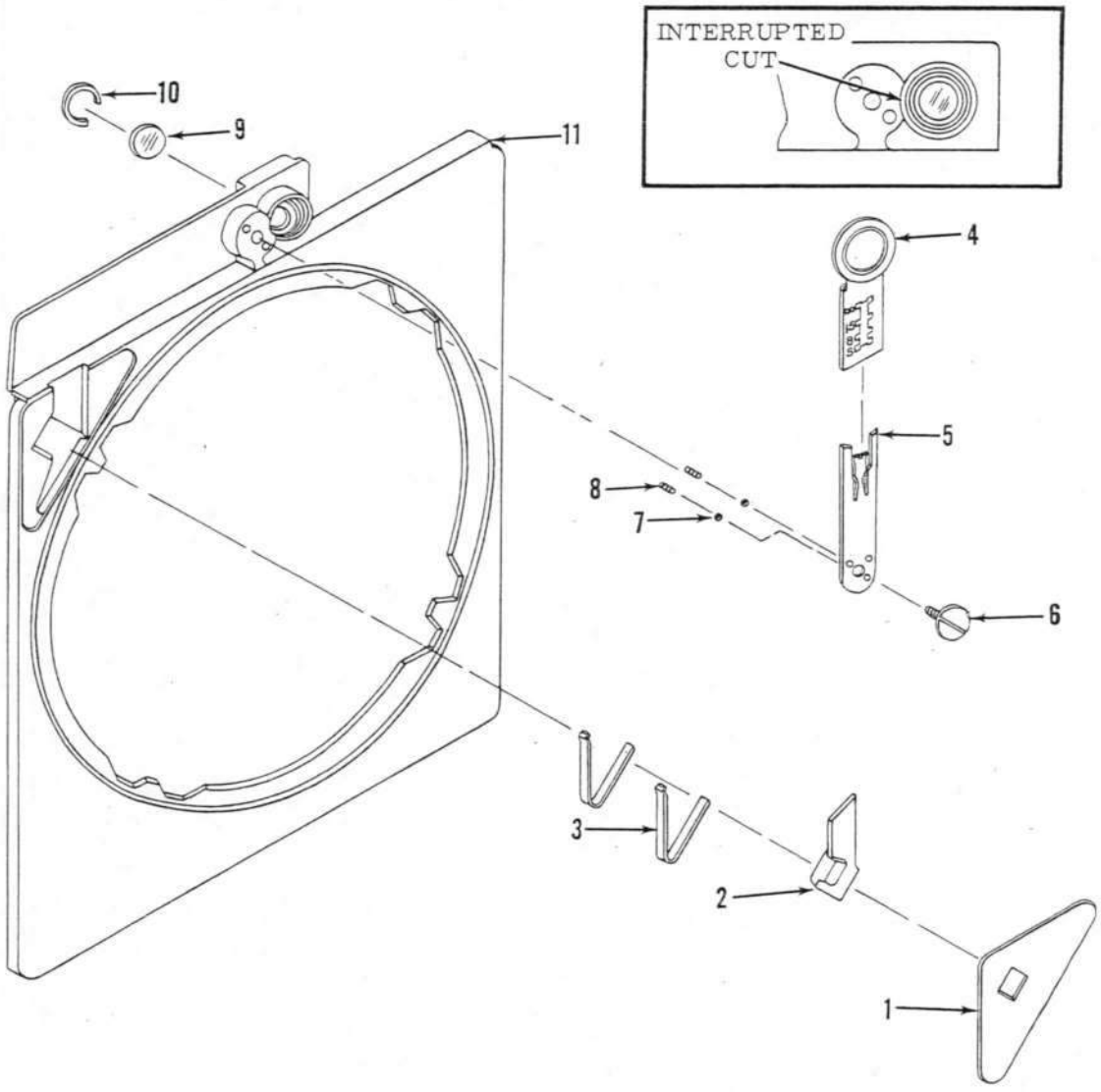

Figure 6A. STATIONARY FRAME COMPLETE (CURRENT MODEL)

Figure and Index No.	Part Number	Nomenclature 1 2 3 4 5	Qty.
6A-	36068-G2	FRAME COMPLETE - STATIONARY CURRENT MODEL (figure 6-6)	Ref.
-1	36072-P1	. Cover - Release Button.	1
-2	36070-P1	. Button - Release	1
-3	36071-P1	. Spring - Button	2
-4	36172-G1	. Peepsight Assembly	1
-5	36247-P1	. Carrier - Peepsight	1
	Attaching Part		
-6	36249	. Screw - Machine (Special)	1
	---***---		
-7	30539-P5	. Ball - Steel, 0.625 in. dia.	2
-8	36258	. Spring - Carrier	2
-9	34770	. Window - Frame	1
	Attaching Part		
-10	30442-P11	. Ring - Retaining, Ebonol S-18	1
	---***---		
-11	36068-G1	. Frame Assembly - Stationary (Current)	1

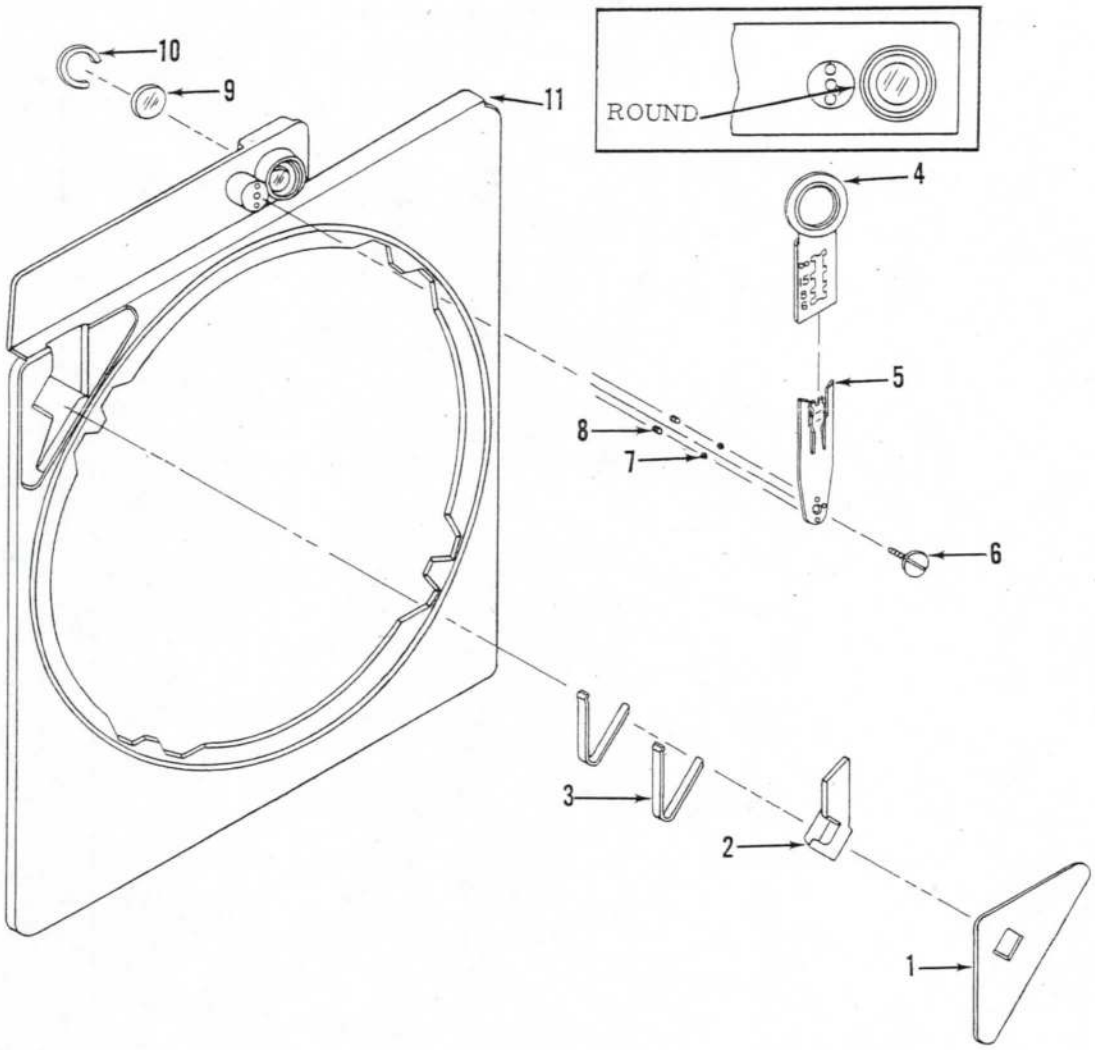

Figure 6B. STATIONARY FRAME COMPLETE - EARLY MODEL

Figure and Index No.	Part Number	Nomenclature	Qty.
6B-	36068-G2X	FRAME COMPLETE - STATIONARY - EARLY MODEL, not available for replacement. Replace with 36068-G2	Ref.
-1	36072-P1	. Cover - Release Button	1
-2	36070-P1	. Button - Release	1
-3	36071-P1	. Spring - Button	2
-4	36172-G1	. Peepsight Assembly	1
-5	*36171-P1	. Carrier - Peepsight	1
	Attaching Part		
-6	*36200	. Screw - Machine - (Special)	1
	---***---		
-7	*30539-P2	. Ball - Steel 0.9375 in. dia.	2
-8	*22193	. Spring - Carrier	2
-9	34770	. Window - Frame	1
	Attaching Part		
-10	30442-P11	. Ring - Retaining, Ebonol S-18	1
	---***---		
-11	36068-G1X	. Frame Assembly - Stationary, (Early) Not available for replacement	Ref.

* Not interchangeable with current Stationary Frame Assembly 36068-G1.

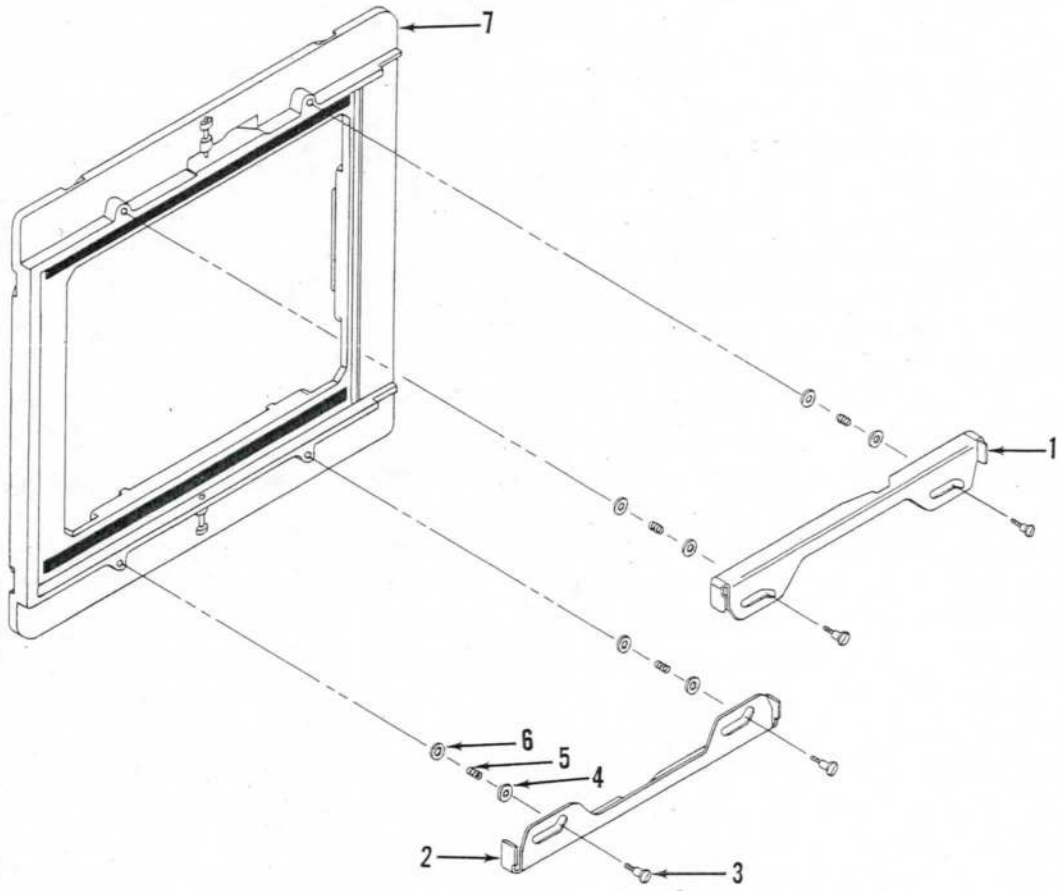

Figure 6C. REVOLVING FRAME COMPLETE

Figure and Index No.	Part Number	Nomenclature 1 2 3 4 5	Qty.
6C-	36060-G2	FRAME COMPLETE - REVOLVING (figure 6-8)	Ref.
-1	36066-P1	. Slidelock - Upper	1
-2	36066-P2	. Slidelock - Lower.	1
	Attaching Part		
-3	36067-P1	. Screw - Machine (Special)	4
	---***---		
-4	30473-P72	. Washer - Flat, 0.250 in OD, 0.128 in. ID, 0.005 in. thick brass, Chrome Plate P-22	4
-5	36065	. Spring - Slidelock	4
-6	30473-P28	. Washer - Flat, 0.250 in OD, 0.099 in. ID, 0.012 in thick, brass, Nickel Plate P-27	4
-7	36350-G1	. Frame Assembly	1
	31722-P3	. . Strip - Light Seal	2
	30685-P18	. . Pin - Dowel	NP NHA
	36064-P1	. . Frame - Revolving	NP NHA

NP - Non Procurable
NHA - Next Higher Assembly

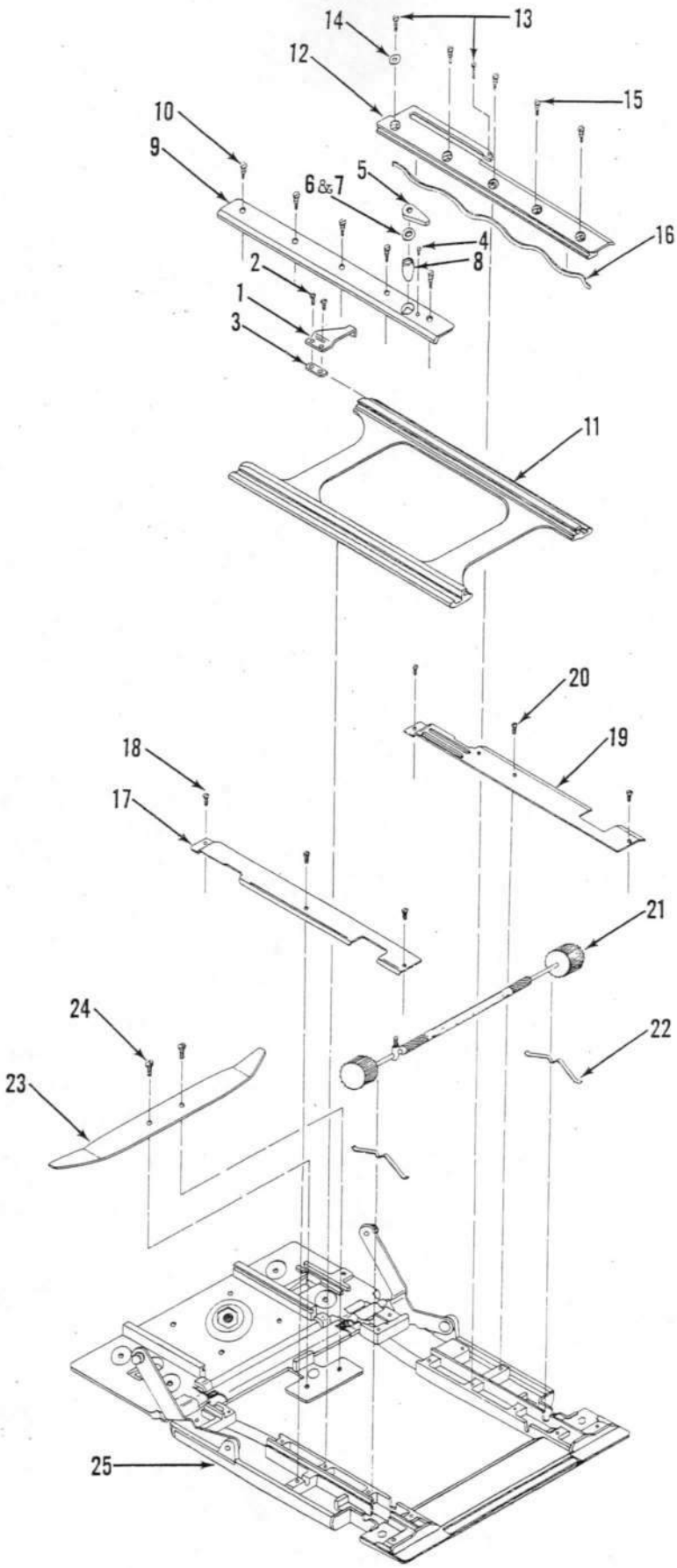

Figure 7. BED COMPLETE

Figure and Index No.	Part Number 1 2 3 4 5	Nomenclature	Qty.
7-	36035-G1	BED COMPLETE (figure 2-59)	Ref.
-1	36059-P1	. Bracket - Rangefinder Actuating	1
	Attaching Parts		
-2	34932	. Screw - Machine (Special)	2
-3	32432	. Plate - Actuating Bracket	1
		---***---	
-4	31246-P2	. Screw, Yoke Lock Lever - Stop (Special)	1
-5	36042-P1	. Lever - Yoke Lock	1
-6	30473-P11	. Washer - flat, 0.281 in. OD, 0.177 in. ID, 0.010 in. thick, brass, Ebonol S-18	AR
-7	33500-P72	. Washer - flat, 0.281 in. OD, 0.177 in. ID, 0.005 in. thick, brass, Ebonol S-18	AR
-8	36041	. Sleeve - Yoke Lock	1
-9	36036-P1	. Guide, Right Yoke	1
	Attaching Part		
-10	116B2-5	. Screw - Machine, 5/16 in. lg., #2-56 pan head, slotted, brass, Chrome Plate P-22	5
		---***---	
-11	36058-P1	. Yoke - Bed	1
-12	36037-P1	Guide, Left - Yoke	1
	Attaching Part		
-13	116B2-5	. Screw - Machine, 5/16 in. lg., #2-56 pan head, slotted, brass Chrome Plate P-22	2
-14	221-1	. Washer - Lock, Internal Tooth, for #2 screw, Shakeproof Type 1 #1202, steel, Black Oxide S-7 & Oil S-12	1
-15	36189-P2	. Screw - Machine (Special)	4
		---***---	
-16	36044-P1	. Spring - Yoke	1
-17	36046-P1	. Cover, Right - Bed	1
	Attaching Part		
-18	116B2-3	. Screw, Machine, 3/16 in. lg., #2-56 pan head, slotted, brass, Chrome Plate P-22	3
		---***---	
-19	36046-P2	. Cover, Left - Bed	1
	Attaching Part		
-20	116B2-3	. Screw, machine, 3/16 in. lg., #2-56 pan head, slotted, brass, Chrome Plate P-22	3
		---***---	
-21	36035-G2	. Pinion Assembly - Focusing	1
	34111-P7	. . Insert - Leather	2
	36039	. . Knob - Focusing	NP NHA
	36040	. . Post - Yoke Lock	NP NHA
	36038-P1	. . Pinion - Focusing	NP NHA
-22	36259	. Spring - Focusing Pinion	1
-23	36047-P1	. Spring - Bed Brace	1
	Attaching Part		
-24	106-5-3	. Screw - Machine, 3/16 in. lg., #5-40 oval fillister head, slotted, steel, Black Oxide S-7 & Oil S-12	2
		---***---	
-25	36049-G1	. Bed Assembly	1
	36049-G2	. . Hinge Assembly	1
	36054	. . . Socket - Tripod	NP NHA
	36051-P1	. . . Hinge - Bed	NP NHA
	30172-P43	. . Pin - Hinge, 0.187 in dia., 1.343 in lg., phosphor bronze, Ebonol S-18	2
	36052-P1	. . Spring - Right	1
	36052-P2	. . Spring - Left	1
	36049-G3	. . Bed Sub Assembly	1
	36045-P1	. . . Cap - Bed	1
	36048-P1	. . . Covering - Bed	1
	36053	. . . Rivet - Bed Brace	NP NHA
	36008-G1	. . . Brace Assembly - Right	NP NHA
	36008-G2	. . . Brace Assembly - Left	NP NHA
	36050-P1	. . . Bed	NP NHA

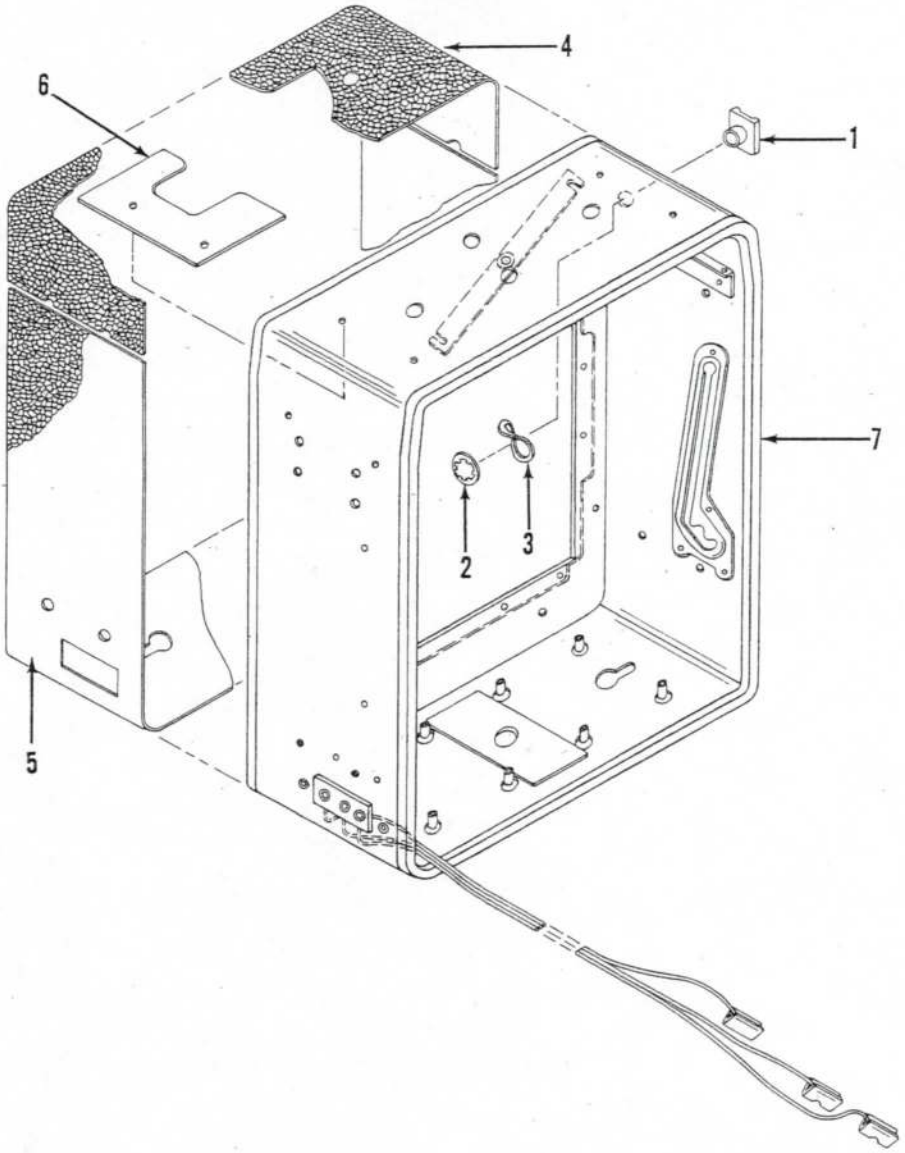

Figure 8. BODY COMPLETE

Figure and Index No.	Part Number	Nomenclature 1 2 3 4 5	Qty.
8 -	36020-G1	BODY COMPLETE (figure 2-63)	Ref.
-1	36024-P1	. Guard - Shutter Release Button.	1
	Attaching Parts		
-2	30241-P19	. Ring - Retaining, Waldes-Kohinoor Inc. Cat. # 51505-31, steel, Cadmium Plate P-21	1
-3	224-4	. Washer - Spring, Shakeproof Part No. 3502-20-22, steel, Cadmium Plate P-21	1
	---***---		
-4	36022-P1	. Covering - Upper	1
-5	36022-P2	. Covering - Lower.	1
-6	36204	. Insulator - Battery	1

Figure and Index No.	Part Number	Nomenclature (1 2 3 4 5)	Qty.
8 -7	36025-G1	. Body Assembly	NP NHA
	36233-G1	. . Receptacle Assembly (riveted assembly)	NP NHA
	36232-P1	. . . Terminal (available for replacement)	1
	36232-P2	. . . Terminal (available for replacement	2
	36027-P1	. . . Receptacle (including wire leads).	NP NHA
	30363-P12	. . Rivet - Receptacle Assembly	NP NHA
	36028-P1	. . Plate - Bed Brace, Right (riveted)	NP NHA
	36028-P2	. . Plate - Bed Brace, Left (riveted)	NP NHA
	30363-P27	. . Rivet - Bed Brace	NP NHA
	36029-P1	. . Support - Rangefinder Housing (riveted)	NP NHA
	30363-P27	. . Rivet - Rangefinder Support	NP NHA
	36032-G1	. . Partition Assembly	NP NHA
	36034-P1	. . . Seal - Light (available for replacement).	1
	36211-P1	. . . Insulator (available for replacement)	1
	36033-P1	. . . Partition	NP NHA
	36030-P1	. . Lock - Focusing Scale (riveted).	NP NHA
	36031	. . Stud - Focusing Scale Lock	NP NHA
	30915-P2	. . Bushing - Bed Hinge (press fit)	NP NHA
	36026-P1	. . Body	NP NHA

ALWAYS ORDER BY PART NUMBER AND NAME AND INCLUDE FINISH WHERE SPECIFIED.

NP - Non Procurable

NHA - Next Higher Assembly